SUPPLEMENTARY INFORMATION

Identification of Novel Candidates for Inhibition of *LasR,* a Quorum-Sensing Receptor of Multidrug Resistant *Pseudomonas aeruginosa,* through a specialized Multi-level in silico Approach

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Table S1: Full characterization of all available LasR PDB structures and bound ligands.

PDB CODE	Resolution Å	Year of Deposition	Ligand	Type of Ligand	IUPAC NAME
2uv0	1.8	2007	C12-HSL	Autoinducer	3-oxo-N-[(3S)-2-oxooxolan-3-yl]dodecanamide
3ix3	1.4	2009	C12-HSL	Autoinducer	3-oxo-N-[(3S)-2-oxooxolan-3-yl]dodecanamide
3ix4	1.8	2009	TP-1	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 2-chlorobenzoate
3ix8	1.8	2009	TP-3	TP-derived Agonist	[2,4-dibromo-6-[[(2-chlorobenzoyl)amino]methyl]phenyl] 2-methylbenzoate
3jpu	2.3	2013	TP-4	TP-derived Agonist	[4-bromo-2-[[(2-chlorobenzoyl)amino]methyl]-6-methylphenyl] 2,4-dichlorobenzoate
4ng2	2.41	2018	C12-HSL	Autoinducer	3-oxo-N-[(3S)-2-oxooxolan-3-yl]dodecanamide
6d6a	1.9	2018	TP-1 Homologue 10	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] benzoate
6d6b	1.7	2018	TP-1 Homologue 11	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 2-nitrobenzoate
6d6c	1.88	2018	TP-1 Homologue 12	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 2-methoxybenzoate
6d6d	1.7	2018	TP-1 Homologue 13	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 2-cyanobenzoate
6d6l	1.63	2018	TP-1 Homologue 14	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 4-chlorobenzoate
6d6m	1.9	2018	TP-1 Homologue 15	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 4-bromobenzoate
6d6n	1.81	2018	TP-1 Homologue 16	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] 4-methoxybenzoate
6d6o	1.65	2018	TP-1 Homologue 17	TP-derived Agonist	[2,4-dibromo-6-[[(2-nitrobenzoyl)amino]methyl]phenyl] octanoate
6d6p	1.65	2018	TP-1 Homologue 19	TP-derived Agonist	N-[[3,5-dibromo-2-(methoxymethoxy)phenyl]methyl]-2-nitrobenzamide
6mvm*	1.89	2018	C14-HSL	Noncognate Autoinducer	3-oxo-N-[(3S)-2-oxotetrahydrofuran-3-yl]tetradecanamide
6mvn*	2.2	2018	C10-HSL	Noncognate Autoinducer	3-oxo-N-[(3S)-2-oxotetrahydrofuran-3-yl]decanamide
6mwh	2.2	2018	BB0020	Agonist	2-(3-bromophenoxy)-N-[(1S,2S,3R,5S)-2-hydroxy-3-bicyclo[3.1.0]hexanyl]acetamide
6mwl	1.5	2018	mBTL	Agonist	4-(3-bromophenoxy)-N-[(3S)-2-oxothiolan-3-yl]butanamide
6mww	2.76	2018	BB0126	Agonist	4-(3-methylsulfonylphenoxy)-N-[(1R,3R,5R)-2-oxo-3-bicyclo[3.1.0]hexanyl]butanamide
6mwz*	1.66	2018	BB0126	Agonist	4-(3-methylsulfonylphenoxy)-N-[(1S,3S,5S)-2-oxo-3-bicyclo[3.1.0]hexanyl]butanamide

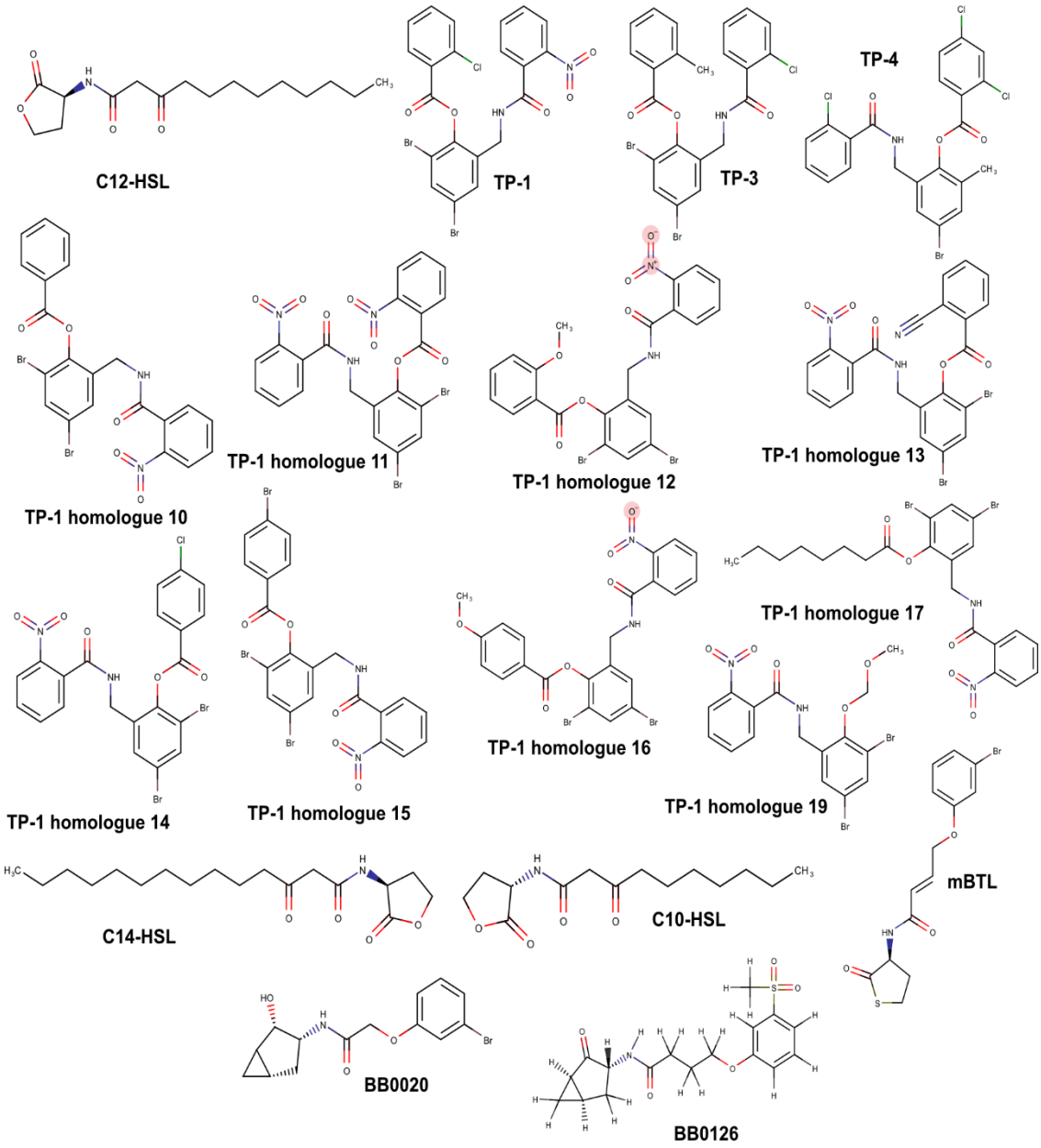

Figure S1: Chemical structures of all ligands bound to LasR structures described in Table S1.

Table S2: Normalised scores for the Re-Docking experiments with all available LasR structures. Scores were normalized to vary from 1 (lowest) to 10 (highest), allowing for comparison between different scoring functions. Structures coupled with the natural autoinducer are shaded in grey. Mutated structures are evidenced by a star.

Normalised Score	AutoDock	Vina	ChemPLP	GoldScore	ChemScore	ASP	LeDock
2uv0	1.0	1.9	2.5	2.5	2.2	2.3	3.0
3ix3	1.7	1.8	1.2	2.9	2.3	1.9	2.8
4ng2	1.8	1.0	2.2	1.0	1.0	1.9	5.2
3ix4	9.8	10.0	10.0	8.9	9.4	10.0	6.6
3ix8	7.5	9.7	8.8	8.7	10.0	6.6	6.9
3jpu	6.1	9.2	8.5	7.7	9.4	6.3	1.0
6d6a	8.8	9.5	9.2	7.3	7.5	8.9	8.8
6d6b	10.0	10.0	9.0	10.0	7.3	9.8	10.0
6d6c	9.5	9.8	9.7	9.1	9.4	9.7	8.1
6d6d	9.9	9.5	9.9	8.1	8.4	10.0	9.8
6d6l	8.5	9.8	8.0	7.4	7.7	8.5	8.3
6d6m	8.7	10.0	7.6	5.7	7.0	8.4	8.5
6d6n	8.5	9.5	8.9	8.4	7.5	9.6	7.3
6d6o	6.0	6.4	8.9	8.5	6.3	8.6	8.0
6d6p	6.0	6.7	4.3	6.2	4.3	6.5	5.0
6mvm*	2.2	1.5	2.9	3.6	2.3	2.4	3.0
6mvn	1.8	1.3	1.4	2.8	2.0	1.0	1.5
6mwh	2.9	3.8	1.8	2.4	3.7	2.6	3.1
6mwl	2.3	2.4	2.0	2.5	3.5	1.7	4.4
6mww	4.2	4.9	3.3	5.4	3.4	3.2	3.8
6mwz*	5.7	3.3	1.0	5.1	7.2	6.4	5.1
Average	5.8	6.3	5.8	5.9	5.8	6.0	5.7

Table S3: Cross-Docking Results for the Molecular Docking with AutoDock Vina for all LasR Structures

	VINA																			
	Receptors																			
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**-8.8**	-8.7	-8.3	-8.3	-7.9	-7.9	-8.3	-8.2	-8.3	-8.3	-8.7	-8.0	-8.1	-8.1	-8.3	-8.3	-8.7	-8.3	-7.7	-8.3	-8.8
3ix3	-8.8	**-8.5**	-8.6	-8.3	-7.8	-8.1	-8.2	-8.2	-8.2	-8.3	-8.4	-7.8	-7.8	-7.7	-8.3	-8.4	-8.7	-8.2	-8.1	-8.3	-8.8
4ng2	-8.8	-8.4	**-8.4**	-8.3	-8.1	-8.2	-8.2	-8.3	-8.1	-8.3	-8.1	-7.8	-7.9	-8.1	-8.3	-8.3	-8.6	-8.4	-8.1	-8.1	-8.8
3ix4	-8.6	-9.0	-9.5	**-14.0**	-12.9	-13.0	-14.0	-14.0	-14.0	-14.0	-13.6	-13.3	-13.3	-13.7	-13.5	-10.3	-8.2	-11.9	-11.9	-10.4	-9.4
3ix8	-10.9	-11.0	-9.5	-14.0	**-13.8**	-13.6	-13.9	-14.1	-14.0	-14.2	-13.6	-13.1	-13.4	-13.5	-13.5	-10.3	-10.4	-13.3	-12.6	-9.4	-9.9
3jpu	-8.7	-9.7	-9.0	-14.0	-13.5	**-13.7**	-13.8	-13.9	-14.0	-14.2	-14.3	-13.8	-14.2	-14.3	-14.2	-10.3	-8.5	-12.2	-12.8	-10.3	-9.4
6d6a	-9.2	-9.1	-9.2	-13.8	-12.5	-12.7	**-13.7**	-13.7	-13.7	-13.8	-13.6	-13.2	-13.5	-13.7	-13.4	-9.7	-8.5	-11.5	-11.5	-9.5	-10.1
6d6b	-8.9	-9.5	-9.3	-13.7	-12.8	-12.6	-13.7	**-14.0**	-13.7	-13.8	-13.9	-13.6	-13.3	-13.5	-13.5	-10.0	-7.8	-11.7	-12.1	-9.6	-9.4
6d6c	-9.2	-9.2	-9.0	-13.8	-12.7	-12.9	-13.6	-13.8	**-13.9**	-14.1	-13.7	-13.2	-13.4	-13.7	-13.6	-9.5	-8.2	-11.6	-11.5	-9.5	-8.7
6d6d	-8.7	-9.0	-9.3	-13.9	-12.8	-12.9	-13.7	-14.2	-13.7	**-14.1**	-13.7	-13.4	-13.5	-13.7	-13.6	-10.2	-8.0	-11.9	-12.1	-9.9	-8.8
6d6l	-8.7	-7.9	-9.5	-13.7	-12.0	-12.7	-13.2	-13.5	-13.4	-13.7	**-13.9**	-13.5	-13.7	-14.1	-13.7	-10.1	-6.9	-10.9	-11.9	-9.9	-9.2
6d6m	-8.6	-9.1	-9.5	-13.3	-11.1	-12.4	-13.0	-13.0	-13.0	-13.2	-14.2	**-14.0**	-14.1	-14.3	-14.1	-10.5	-7.3	-10.8	-11.8	-8.4	-8.7
6d6n	-7.9	-8.9	-8.7	-13.4	-12.3	-12.5	-13.3	-13.3	-13.3	-13.7	-13.8	-13.4	**-13.7**	-13.9	-13.8	-10.1	-6.2	-10.0	-11.6	-9.5	-8.6
6d6o	-7.3	-8.4	-8.6	-11.7	-10.2	-10.9	-11.7	-11.6	-11.7	-11.9	-11.6	-11.3	-11.5	**-11.7**	-11.7	-9.5	-7.2	-9.8	-10.1	-8.8	-8.3
6d6p	-9.3	-9.2	-9.4	-11.4	-10.0	-10.5	-11.2	-11.3	-11.4	-11.7	-11.8	-11.5	-11.8	-12.0	**-11.9**	-9.0	-9.3	-9.3	-9.8	-10.1	-9.3
6mvm	-9.0	-8.7	-8.5	-8.4	-8.0	-8.0	-8.6	-8.2	-8.3	-8.5	-8.3	-7.7	-8.0	-7.9	-7.7	**-8.5**	-9.1	-8.4	-8.2	-8.2	-8.9
6mvn	-8.5	-8.3	-8.4	-7.8	-7.7	-7.7	-8.3	-8.2	-8.1	-8.1	-8.3	-7.9	-8.0	-7.9	-8.1	-8.4	**-8.4**	-8.2	-7.7	-8.2	-8.8
6mwh	-10.8	-10.6	-10.2	-10.6	-10.3	-10.2	-10.9	-10.8	-10.7	-10.9	-9.9	-10.0	-9.8	-10.1	-9.7	-10.2	-10.5	**-10.5**	-10.3	-10.3	-10.6
6mwl	-10.1	-9.7	-9.6	-9.5	-9.2	-9.3	-9.5	-9.3	-9.5	-9.4	-9.4	-9.2	-9.2	-9.3	-9.6	-9.7	-9.8	-9.8	**-9.1**	-9.9	-9.9
6mww	-10.7	-10.7	-10.4	-9.5	-10.2	-10.2	-9.6	-10.0	-9.9	-9.7	-9.4	-8.9	-9.2	-9.4	-9.1	-10.8	-11.0	-10.6	-9.8	**-10.7**	-11.0
6mwz	-10.3	-10.7	-10.9	-10.0	-10.0	-10.3	-10.0	-10.4	-10.2	-10.3	-9.8	-9.8	-9.7	-9.9	-10.0	-10.7	-11.0	-10.6	-10.3	-10.6	**-11.4**

Table S4: Cross-Docking Results for the Molecular Docking with AutoDock 4 for all LasR Structures

	AutoDock																			
	Receptors																			
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**-11.0**	-11.7	-11.8	-11.1	-11.0	-11.1	-11.1	-11.0	-10.9	-11.5	-10.9	-10.3	-10.7	-10.7	-10.5	-11.5	-11.8	-11.5	-11.4	-11.6	-12.0
3ix3	-12.4	**-11.6**	-12.0	-11.3	-11.4	-10.9	-11.2	-10.9	-10.7	-11.1	-10.4	-11.0	-10.7	-10.7	-10.6	-11.5	-11.7	-11.7	-11.2	-11.3	-12.5
4ng2	-12.4	-11.5	**-11.7**	-10.9	-11.0	-10.6	-10.9	-10.9	-10.5	-11.0	-10.7	-11.0	-10.9	-10.7	-10.5	-11.3	-11.7	-11.6	-11.2	-11.3	-12.4
3ix4	-16.2	-16.6	-16.2	**-19.3**	-19.4	-19.2	-18.6	-19.2	-18.9	-18.5	-18.1	-17.7	-18.4	-18.0	-18.0	-15.5	-15.2	-19.4	-18.1	-17.7	-18.8
3ix8	-14.3	-14.7	-13.8	-16.7	**-17.1**	-17.0	-15.4	-16.1	-16.1	-16.9	-16.2	-15.8	-16.0	-16.2	-15.5	-15.5	-14.8	-16.6	-15.8	-15.6	-16.7
3jpu	-14.6	-12.4	-15.3	-16.3	-17.2	**-15.8**	-16.8	-16.5	-16.3	-16.3	-15.6	-15.8	-16.1	-16.3	-15.5	-15.1	-13.2	-15.9	-15.3	-14.6	-16.3
6d6a	-16.7	-16.0	-16.3	-18.5	-18.2	-17.9	**-18.3**	-18.1	-17.7	-18.3	-17.5	-17.3	-17.6	-17.5	-17.4	-15.7	-17.1	-16.8	-17.5	-16.2	-17.4
6d6b	-17.5	-15.1	-18.2	-19.5	-19.6	-19.6	-19.6	**-19.5**	-19.3	-20.1	-15.3	-17.9	-18.5	-18.7	-18.7	-16.9	-17.2	-19.1	-17.4	-17.5	-19.2
6d6c	-15.7	-16.8	-17.5	-18.8	-19.2	-19.0	-19.0	-18.4	**-19.1**	-19.2	-18.3	-17.7	-17.4	-18.2	-17.8	-17.7	-16.8	-18.2	-16.9	-18.5	-17.3
6d6d	-14.6	-15.6	-17.0	-18.9	-18.6	-18.8	-19.0	-19.1	-19.0	**-19.4**	-17.7	-18.1	-18.0	-18.4	-18.1	-18.0	-14.8	-17.5	-18.4	-16.9	-18.2
6d6l	-17.0	-17.1	-17.2	-19.3	-17.9	-18.8	-19.0	-18.8	-18.2	-18.9	**-18.1**	-17.7	-16.8	-18.3	-18.0	-16.8	-17.1	-18.1	-18.6	-17.5	-18.3
6d6m	-14.1	-16.5	-16.4	-19.3	-19.5	-18.2	-19.6	-19.1	-19.1	-19.5	-17.3	**-18.2**	-18.0	-18.8	-17.6	-16.8	-15.5	-17.6	-18.5	-17.3	-17.2
6d6n	-17.0	-16.7	-17.2	-18.8	-18.2	-18.9	-19.5	-18.2	-18.5	-18.4	-17.6	-17.9	**-18.1**	-18.4	-17.5	-17.0	-17.1	-17.8	-17.6	-17.9	-18.4
6d6o	-15.4	-16.4	-15.7	-17.8	-18.0	-17.4	-18.5	-18.2	-17.4	-17.7	-17.4	-15.8	-18.1	**-15.7**	-17.3	-16.1	-15.0	-17.8	-16.8	-16.0	-17.7
6d6p	-15.8	-15.2	-16.3	-15.9	-16.3	-16.1	-16.5	-16.0	-15.9	-16.2	-16.0	-15.7	-16.0	-16.3	**-15.7**	-16.1	-15.3	-15.8	-16.1	-16.3	-16.7
6mvm	-13.0	-12.3	-11.9	-11.4	-11.7	-11.8	-12.0	-12.1	-11.2	-11.4	-11.4	-10.7	-11.6	-11.4	-10.9	**-12.1**	-12.8	-12.7	-12.5	-12.2	-12.7
6mvn	-12.7	-11.0	-12.1	-11.1	-10.7	-10.5	-11.1	-10.7	-10.4	-10.6	-10.3	-10.6	-10.3	-10.4	-10.5	-11.2	**-11.8**	-11.8	-11.4	-10.9	-12.4
6mwh	-12.6	-11.8	-12.4	-12.5	-12.3	-12.0	-12.7	-12.6	-12.2	-12.7	-12.5	-12.2	-11.8	-12.2	-12.0	-11.9	-12.2	**-12.7**	-12.3	-12.3	-13.1
6mwl	-13.4	-12.7	-12.7	-12.2	-12.2	-12.1	-12.4	-12.1	-12.1	-12.1	-11.7	-11.5	-12.0	-11.8	-11.6	-12.6	-13.0	-13.0	**-12.2**	-13.0	-13.2
6mww	-14.0	-13.3	-13.8	-13.5	-13.3	-13.5	-13.1	-13.5	-13.4	-13.6	-12.6	-13.5	-12.6	-12.6	-12.5	-13.7	-13.7	-14.0	-13.3	**-14.0**	-15.1
6mwz	-13.4	-13.5	-13.6	-13.5	-13.6	-13.1	-12.8	-13.7	-13.5	-13.3	-12.5	-12.1	-12.7	-12.6	-13.0	-13.7	-13.5	-14.5	-13.6	-14.1	**-15.5**

Table S5: Cross-Docking Results for the Molecular Docking with LeDock for all LasR Structures

	LeDock																				
	Receptors																				
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**-8.2**	-7.9	-7.5	-7.1	-6.4	-6.9	-6.9	-6.9	-6.8	-6.7	-6.8	-6.4	-6.8	-6.8	-6.6	-7.5	-7.3	-7.3	-7.0	-7.1	-7.7
3ix3	-8.3	**-8.0**	-7.8	-7.1	-7.0	-7.3	-7.1	-6.7	-6.6	-6.9	-6.9	-6.7	-6.9	-6.5	-6.8	-7.5	-7.4	-7.3	-7.1	-7.5	-7.7
4ng2	-8.4	-7.9	**-7.5**	-7.7	-6.6	-7.0	-6.9	-7.2	-6.7	-7.4	-6.7	-6.3	-6.4	-6.8	-6.9	-7.5	-7.6	-7.2	-7.2	-7.4	-7.5
3ix4	-9.6	-9.5	-9.4	**-12.2**	-11.1	-10.7	-12.1	-12.1	-11.7	-11.9	-11.3	-11.2	-11.3	-11.4	-11.3	-9.3	-8.4	-10.6	-10.8	-8.6	-7.6
3ix8	-8.6	-9.7	-8.4	-10.3	**-10.6**	-10.2	-10.5	-10.2	-9.8	-10.2	-10.1	-9.7	-10.0	-10.2	-10.0	-8.8	-7.8	-9.4	-9.6	-7.9	-8.1
3jpu	-8.6	-8.7	-8.3	-10.4	-10.4	**-10.0**	-10.0	-10.2	-10.1	-10.1	-10.8	-10.6	-10.5	-10.6	-10.5	-8.6	-7.2	-9.5	-9.6	-7.6	-7.8
6d6a	-9.3	-9.0	-8.8	-11.5	-10.2	-10.2	**-11.5**	-11.2	-11.0	-11.4	-10.7	-10.6	-10.7	-11.0	-10.6	-9.0	-8.8	-10.1	-10.2	-8.2	-8.8
6d6b	-10.0	-9.8	-9.0	-12.3	-11.4	-11.1	-11.9	**-12.2**	-11.9	-12.2	-11.4	-11.4	-11.4	-11.5	-11.3	-9.4	-9.0	-10.5	-11.1	-8.6	-8.8
6d6c	-9.5	-9.5	-9.0	-11.7	-10.9	-10.5	-11.4	-11.3	**-11.1**	-11.3	-10.7	-10.5	-10.6	-10.9	-10.4	-8.7	-9.0	-10.7	-10.4	-8.4	-7.3
6d6d	-9.3	-9.5	-9.5	-12.3	-11.1	-10.9	-11.9	-12.0	-11.7	**-12.1**	-11.4	-11.3	-11.3	-11.6	-11.2	-9.4	-8.5	-10.8	-11.1	-9.2	-7.9
6d6l	-8.7	-8.6	-8.5	-11.2	-9.9	-9.7	-11.2	-11.1	-10.5	-11.1	**-11.2**	-11.3	-11.2	-11.3	-11.0	-8.8	-8.4	-9.7	-10.5	-8.6	-8.6
6d6m	-9.1	-8.5	-8.8	-11.1	-9.8	-10.0	-11.2	-10.9	-10.5	-11.1	-11.3	**-11.3**	-11.2	-11.4	-11.1	-8.4	-8.3	-9.8	-10.5	-8.2	-7.0
6d6n	-8.7	-8.8	-8.5	-11.1	-9.9	-10.1	-11.2	-11.2	-10.8	-11.4	-10.7	-10.5	**-10.6**	-10.8	-10.5	-8.2	-8.0	-9.7	-9.9	-8.1	-8.6
6d6o	-8.7	-8.7	-7.8	-10.5	-9.3	-9.2	-10.2	-10.1	-9.5	-10.4	-10.6	-10.4	-10.3	**-11.1**	-10.6	-8.0	-8.0	-9.3	-10.0	-7.8	-7.6
6d6p	-8.4	-8.2	-8.9	-10.1	-9.4	-9.0	-9.9	-9.9	-9.7	-10.0	-9.4	-9.3	-9.4	-9.5	**-9.3**	-7.9	-8.0	-9.4	-9.3	-8.8	-8.2
6mvm	-8.1	-8.5	-8.1	-7.1	-7.1	-6.8	-7.1	-6.7	-7.3	-6.9	-7.4	-7.0	-6.9	-7.1	-7.3	**-8.1**	-7.0	-7.5	-6.9	-7.5	-7.9
6mvn	-7.8	-7.6	-7.2	-7.2	-6.9	-6.4	-7.0	-6.6	-6.3	-6.9	-6.9	-6.6	-6.6	-6.6	-6.9	-7.3	**-7.3**	-7.2	-7.2	-7.0	-7.3
6mwh	-8.6	-8.3	-8.0	-7.8	-7.7	-7.6	-7.9	-7.8	-7.6	-7.9	-7.7	-7.2	-7.4	-7.5	-7.6	-8.0	-8.3	**-8.2**	-7.9	-8.3	-8.2
6mwl	-9.6	-9.1	-9.2	-8.3	-8.2	-8.1	-8.2	-8.3	-8.0	-8.1	-8.0	-7.6	-7.8	-7.8	-7.9	-8.9	-9.4	-8.8	**-9.0**	-9.1	-8.7
6mww	-8.5	-8.8	-8.8	-7.9	-8.6	-7.7	-7.8	-8.2	-7.6	-7.5	-7.8	-7.4	-7.3	-7.9	-7.4	-8.8	-8.5	-8.7	-8.6	**-8.6**	-8.6
6mwz	-9.1	-9.3	-9.4	-8.2	-8.4	-8.3	-7.8	-8.6	-8.0	-8.2	-8.2	-7.6	-7.5	-7.8	-8.2	-9.0	-8.7	-9.3	-8.8	-9.1	**-9.4**

Table S6: Cross-Docking Results for the Molecular Docking with Gold ChemPLP scoring function for all LasR Structures.

	Gold - ChemPLP																				
	Receptors																				
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**86.7**	87.3	87.0	76.2	73.8	74.2	80.8	74.9	76.0	78.5	76.7	74.8	76.4	74.5	74.4	88.6	89.0	74.8	84.9	80.3	71.0
3ix3	91.7	**89.3**	90.4	76.4	77.2	75.1	79.5	75.0	75.4	77.5	75.4	73.8	77.2	72.8	73.9	89.5	93.4	74.4	86.7	79.5	72.2
4ng2	89.8	88.1	**85.7**	74.2	75.2	74.3	81.8	77.8	74.2	80.9	81.7	73.2	77.9	72.7	74.4	84.0	84.1	77.2	81.7	85.6	72.0
3ix4	93.5	95.6	86.4	**124.7**	118.1	121.9	124.3	122.6	124.2	123.3	114.7	115.6	119.8	119.4	116.5	88.5	87.8	110.9	106.8	95.3	82.0
3ix8	104.2	104.7	94.3	121.7	**120.8**	120.2	122.5	122.0	120.5	124.5	115.6	109.4	111.1	118.0	108.1	98.2	98.9	116.7	107.9	80.2	76.2
3jpu	92.9	96.1	86.6	123.4	119.0	**123.1**	122.2	122.4	121.8	124.9	117.1	112.3	118.2	114.7	114.3	96.2	83.0	110.3	107.7	71.1	65.7
6d6a	94.2	93.8	83.6	119.6	109.1	115.2	**120.4**	119.8	117.9	119.8	116.6	110.1	114.8	116.6	111.4	83.4	91.3	106.1	104.9	90.5	84.5
6d6b	95.3	95.6	87.7	123.5	118.5	120.6	125.0	**121.8**	120.8	123.3	124.3	120.5	121.6	123.3	119.2	89.8	92.4	116.4	108.4	88.0	83.5
6d6c	98.9	101.2	84.5	126.4	114.1	117.4	124.8	126.3	**124.4**	130.1	120.8	116.6	116.8	121.6	118.3	89.2	96.5	111.3	107.4	87.0	89.1
6d6d	96.8	95.6	84.3	127.1	120.1	122.7	127.9	127.3	125.8	**126.9**	123.6	121.2	126.3	122.9	119.0	89.0	91.9	111.2	110.2	83.0	78.0
6d6l	82.7	77.7	83.7	122.4	114.3	115.4	118.6	123.1	118.3	121.9	**114.7**	117.5	118.4	117.5	119.1	85.3	74.6	104.0	105.0	87.9	76.6
6d6m	78.3	84.9	74.9	119.9	108.9	113.6	121.1	124.9	120.8	122.6	122.1	**114.1**	120.1	124.0	117.3	71.3	74.0	103.8	101.4	83.5	87.4
6d6n	77.0	84.7	79.3	126.2	115.4	120.5	125.2	126.4	126.9	126.7	118.9	115.7	**122.8**	124.6	115.2	70.9	73.4	106.0	99.2	89.2	83.2
6d6o	89.5	86.6	82.0	123.4	108.5	109.8	119.1	103.8	118.6	107.8	122.6	115.0	124.2	**124.9**	120.3	91.8	81.8	92.3	105.2	83.9	88.4
6d6p	83.0	84.1	80.1	97.6	87.6	92.9	95.6	96.9	98.4	101.0	102.2	97.1	100.9	98.1	**97.0**	74.5	82.7	90.7	87.9	83.9	83.1
6mvm	90.9	77.8	89.0	88.9	82.8	86.4	86.2	82.1	83.4	85.0	81.2	78.6	78.4	84.2	83.0	**88.9**	75.7	91.1	92.8	82.9	77.7
6mvn	83.5	80.5	79.7	73.3	71.1	73.0	75.2	74.9	71.7	73.6	73.8	80.7	81.3	74.7	79.0	81.6	**81.7**	83.9	79.1	81.7	67.1
6mwh	85.7	80.2	80.1	85.4	81.7	85.6	83.0	83.7	83.2	88.4	78.8	79.2	78.1	79.1	77.7	79.8	82.4	**91.5**	88.2	85.8	71.4
6mwl	90.3	87.2	83.9	83.3	82.2	83.0	83.3	84.4	82.8	85.7	81.1	79.6	80.8	77.3	77.6	82.6	88.8	88.5	**84.2**	89.7	73.0
6mww	90.6	87.3	84.3	80.3	84.8	85.9	81.0	84.1	81.6	84.3	78.3	81.3	79.2	84.0	79.0	92.4	84.4	93.9	93.8	**92.7**	83.4
6mwz	83.0	83.6	86.5	85.2	83.7	89.4	83.4	87.1	82.5	84.8	83.6	79.9	80.8	83.1	78.4	96.8	88.7	96.4	90.7	95.5	**84.5**

Table S7: Cross-Docking Results for the Molecular Docking with Gold GoldScore scoring function for all LasR Structures

	Gold - GoldScore																				
	Receptors																				
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**71.4**	70.3	69.2	71.1	63.3	68.2	69.4	70.5	69.2	66.1	63.4	56.8	62.8	61.4	62.7	71.8	72.0	67.5	66.0	68.6	72.6
3ix3	72.3	**72.5**	69.7	68.1	63.5	67.8	69.2	72.0	66.2	69.1	60.6	55.5	60.7	62.1	64.5	72.9	72.5	65.0	65.6	67.4	72.0
4ng2	69.0	67.2	**66.9**	67.9	63.7	68.8	69.2	68.7	67.2	70.7	64.9	57.3	61.7	63.5	62.4	68.5	69.6	67.1	61.3	66.9	72.8
3ix4	77.0	78.6	72.2	**98.2**	92.3	91.9	96.9	95.9	96.7	98.3	91.5	85.6	93.6	94.2	92.2	80.2	67.4	89.4	82.4	74.5	83.7
3ix8	86.4	82.3	74.9	95.2	**96.3**	93.8	93.2	98.5	95.4	94.5	92.1	84.6	92.0	92.0	90.8	82.3	69.1	87.9	83.1	75.9	75.0
3jpu	73.8	70.1	72.5	95.4	91.3	**91.9**	91.6	94.4	93.7	95.7	90.7	84.7	91.4	92.1	89.3	79.4	46.0	84.7	80.5	73.7	76.0
6d6a	76.7	76.2	72.6	93.9	88.5	86.5	**92.7**	92.3	90.7	93.1	90.0	83.1	91.3	92.3	89.4	74.5	61.9	83.8	77.8	76.7	85.1
6d6b	82.1	78.3	74.1	101.1	97.0	92.7	99.9	**101.9**	99.8	99.6	95.6	84.0	95.4	96.8	94.8	82.2	75.1	93.4	84.0	76.3	85.5
6d6c	85.4	85.5	73.4	99.9	93.3	92.4	98.6	99.0	**98.2**	99.6	96.7	46.3	96.1	98.3	94.3	81.7	78.4	92.6	91.0	78.2	84.5
6d6d	80.2	75.2	73.9	97.3	92.0	90.4	98.4	97.2	95.2	**95.9**	92.9	87.3	94.4	93.3	93.4	81.8	66.9	88.8	81.9	79.3	80.6
6d6l	54.0	60.3	69.5	96.4	87.1	88.5	93.7	94.1	89.3	94.4	**90.6**	84.1	89.6	92.0	90.8	77.2	47.5	85.6	83.1	72.4	76.8
6d6m	65.5	65.9	70.2	96.1	86.5	86.8	94.2	95.9	95.1	95.0	92.0	**83.8**	90.3	94.5	90.3	74.9	64.4	84.4	79.4	77.0	88.2
6d6n	66.7	72.2	68.5	96.5	91.1	94.0	98.4	97.5	96.8	96.6	96.2	81.5	**96.8**	95.5	96.1	80.6	73.8	89.2	83.9	81.6	85.1
6d6o	67.8	77.8	76.6	92.7	93.2	92.6	93.1	96.0	92.7	95.7	97.1	85.2	96.2	**96.6**	93.8	83.9	71.4	93.2	82.5	82.8	93.7
6d6p	77.1	77.9	73.8	80.3	73.4	73.9	78.8	79.8	78.2	81.4	80.5	76.0	85.0	85.9	**85.2**	65.9	69.0	71.6	70.4	67.6	77.2
6mvm	72.7	76.1	74.3	73.1	68.7	71.1	72.7	70.3	69.0	73.4	66.9	59.9	65.6	70.9	68.6	**76.3**	70.8	69.4	65.9	70.1	73.8
6mvn	72.9	66.9	68.7	61.5	63.3	59.8	61.6	64.1	59.7	64.1	64.8	55.0	64.6	62.2	59.0	66.8	**70.5**	64.7	64.9	66.2	68.3
6mwh	71.7	69.3	66.4	66.4	66.9	69.5	70.3	68.7	66.8	68.4	63.0	65.3	65.8	65.4	61.8	65.9	71.0	**72.9**	68.0	66.8	72.9
6mwl	71.4	71.1	69.4	67.9	67.9	68.4	69.2	68.8	67.3	68.3	64.9	56.8	65.1	67.2	63.0	68.4	71.0	77.0	**71.0**	75.2	72.9
6mww	83.8	82.2	78.6	77.7	75.3	75.4	75.5	76.1	75.2	78.3	71.4	69.5	78.3	79.2	72.0	80.2	80.9	80.1	81.7	**83.9**	85.0
6mwz	80.6	79.3	79.6	75.9	72.6	74.0	72.6	75.3	70.7	78.9	73.7	69.8	72.6	70.8	78.1	79.1	77.8	78.1	82.0	80.2	**84.3**

Table S8: Cross-Docking Results for the Molecular Docking with Gold ChemScore scoring function for all LasR Structures

	Gold - ChemScore																				
	Receptors																				
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**39.5**	38.1	36.5	31.4	37.8	30.7	33.3	31.7	31.1	33.2	34.3	33.0	33.5	31.5	34.0	40.2	37.5	29.7	37.1	33.1	39.1
3ix3	40.2	**39.6**	38.3	31.9	37.5	31.4	30.8	32.9	37.4	33.2	34.7	34.9	34.2	31.9	34.5	40.6	39.0	29.8	39.0	32.8	40.3
4ng2	39.4	39.5	**37.1**	34.5	33.2	34.8	32.7	35.2	34.9	32.8	36.5	35.6	34.6	32.6	33.2	40.2	39.3	36.2	38.1	39.2	41.0
3ix4	45.9	46.5	41.6	**58.2**	52.8	53.0	57.9	58.0	56.9	59.0	57.1	54.2	55.9	54.4	56.5	44.9	45.8	52.7	51.9	52.2	51.3
3ix8	54.6	54.6	52.2	59.8	**59.5**	58.5	57.2	58.6	58.9	59.4	55.8	55.3	56.6	57.3	56.2	51.4	52.3	58.0	56.1	45.6	51.9
3jpu	51.9	53.6	47.1	60.6	59.5	**58.3**	59.2	59.4	59.4	60.4	54.8	55.1	56.2	55.3	57.5	50.8	44.0	56.7	53.1	44.8	52.1
6d6a	41.9	45.4	42.6	54.4	51.9	53.0	**55.9**	56.2	54.8	55.8	55.6	52.8	51.8	55.9	52.8	41.2	46.1	52.6	51.5	47.5	47.4
6d6b	43.5	42.0	40.0	56.6	50.0	52.5	55.2	**54.5**	51.1	55.6	57.1	53.2	53.4	56.4	53.6	38.8	44.3	50.1	50.2	42.0	50.3
6d6c	46.8	46.1	42.9	59.5	54.7	54.8	58.4	58.7	**57.8**	60.1	55.5	52.9	53.7	56.7	55.3	39.8	46.9	54.2	52.4	45.0	51.2
6d6d	47.3	43.1	40.6	59.8	55.5	55.7	58.9	56.4	58.1	**60.1**	54.9	54.2	54.8	57.2	56.6	41.3	44.7	52.8	54.9	41.3	47.7
6d6l	43.3	40.7	37.7	55.5	52.9	53.3	55.8	56.2	55.7	58.0	**53.8**	53.8	53.6	55.3	54.5	40.0	38.1	51.2	48.3	45.1	49.3
6d6m	39.7	38.2	40.0	55.6	52.5	53.0	57.1	56.2	55.0	56.4	52.6	**51.9**	56.9	56.1	54.7	35.3	40.1	50.9	50.3	45.5	45.1
6d6n	41.8	41.5	39.1	56.8	52.9	53.3	55.9	55.6	54.5	57.4	54.0	53.1	**55.9**	53.8	54.9	38.8	35.6	52.0	50.4	43.6	47.4
6d6o	42.1	45.0	37.6	55.5	50.9	50.7	56.3	54.5	55.2	51.6	54.2	52.3	53.5	**55.2**	53.7	43.9	41.4	45.5	49.5	40.9	48.4
6d6p	39.7	39.0	40.5	45.0	41.7	40.7	42.5	44.1	42.9	45.3	43.4	40.9	43.0	42.7	**42.6**	37.5	36.7	42.5	40.3	38.6	39.1
6mvm	37.6	38.4	40.5	32.6	32.7	32.7	33.5	33.4	34.7	34.2	35.5	33.1	35.6	35.0	35.7	**41.3**	34.1	33.0	41.7	35.3	41.5
6mvn	37.0	36.7	34.8	35.1	35.9	34.2	34.3	31.5	30.8	33.6	34.9	33.6	34.8	33.8	33.5	37.1	**36.1**	35.9	36.1	37.6	38.0
6mwh	42.4	42.3	41.0	39.3	39.8	39.2	39.9	39.5	40.9	40.0	39.4	38.2	37.0	40.2	39.1	41.9	44.0	**40.7**	41.9	40.1	46.5
6mwl	43.4	42.1	41.0	40.6	40.1	39.6	38.9	38.0	39.3	38.7	37.4	36.6	37.8	38.8	36.3	42.2	42.4	41.8	**41.5**	41.2	47.8
6mww	39.6	41.6	40.2	37.7	41.6	40.4	39.4	40.6	39.7	39.0	39.4	38.7	36.5	40.5	40.1	45.2	41.8	42.2	43.1	**43.1**	48.2
6mwz	40.6	40.7	38.9	37.6	38.7	40.5	39.8	41.4	38.0	39.1	37.9	38.4	38.8	38.4	39.1	42.7	41.2	38.8	43.5	41.7	**52.4**

Table S9: Cross-Docking Results for the Molecular Docking with Gold ChemScore scoring function for all LasR Structures

	Gold -ASP																			
	Receptors																			
LIG	**2uv0**	**3ix3**	**4ng2**	**3ix4**	**3ix8**	**3jpu**	**6d6a**	**6d6b**	**6d6c**	**6d6d**	**6d6l**	**6d6m**	**6d6n**	**6d6o**	**6d6p**	**6mvm**	**6mvn**	**6mwh**	**6mwl**	**6mww**	**6mwz**
2uv0	**46.2**	43.8	45.4	39.9	40.2	39.6	42.9	44.1	43.0	40.6	43.4	43.0	42.0	42.5	42.7	47.0	44.5	46.0	47.5	40.0	51.3
3ix3	47.3	**44.6**	45.6	42.3	42.6	39.7	43.6	40.9	43.7	45.0	43.1	43.6	43.0	42.1	42.6	45.3	44.6	46.7	45.3	43.6	51.1
4ng2	46.2	44.5	**45.8**	42.9	41.1	39.5	43.6	40.7	43.1	42.5	43.8	41.3	41.8	42.9	40.9	47.6	43.8	43.2	45.2	41.6	49.7
3ix4	55.9	57.6	55.4	**70.1**	63.2	64.3	68.9	70.5	69.0	70.0	69.9	67.1	66.3	69.7	68.2	50.9	51.9	63.3	61.0	51.9	61.4
3ix8	54.2	53.8	50.6	61.5	**59.4**	58.8	61.2	61.3	60.0	61.5	60.3	58.8	59.9	61.0	59.7	48.7	48.0	59.2	57.6	40.9	58.5
3jpu	51.2	52.4	46.1	64.0	61.1	**61.2**	62.1	61.9	62.0	63.5	62.5	59.7	61.1	61.7	62.0	49.7	42.6	59.5	58.4	38.9	56.4
6d6a	52.5	53.6	54.0	67.2	60.8	62.9	**67.4**	67.8	67.9	67.8	67.1	64.7	66.7	68.3	66.3	48.4	53.1	61.8	60.5	48.3	61.1
6d6b	60.3	61.8	55.2	72.2	65.2	67.3	71.3	**69.6**	70.4	70.1	69.4	69.5	67.9	69.3	70.0	52.6	52.5	62.8	63.3	51.3	64.8
6d6c	55.4	56.7	55.4	70.8	64.4	63.5	68.7	71.6	**69.3**	72.4	68.6	69.3	68.2	69.9	69.2	51.0	49.6	60.7	63.0	51.7	66.4
6d6d	60.9	60.6	57.5	72.5	65.0	66.8	70.4	71.2	70.9	**70.5**	70.4	68.9	69.5	70.7	70.6	51.0	51.3	63.9	63.7	47.2	62.3
6d6l	48.5	53.0	45.8	70.0	62.3	63.5	67.0	67.1	67.3	68.9	**69.6**	67.5	68.0	69.1	67.8	47.2	45.3	55.7	60.8	45.6	55.2
6d6m	39.8	44.3	43.3	69.6	60.2	61.6	66.7	66.1	65.9	65.2	66.7	**66.5**	67.4	67.9	67.6	48.0	41.8	56.1	59.8	43.5	59.7
6d6n	45.5	47.8	50.4	68.7	61.7	64.7	70.9	70.8	69.4	69.4	68.3	67.2	**69.1**	70.2	68.9	50.1	39.1	57.8	61.5	45.1	60.1
6d6o	47.7	46.9	46.5	59.8	57.1	56.9	64.4	60.2	58.8	58.1	67.8	64.4	64.1	**68.2**	66.3	52.9	43.6	57.4	57.9	43.1	62.0
6d6p	44.2	44.4	43.3	60.0	51.1	51.9	59.0	57.1	59.6	60.8	60.4	59.5	60.3	61.5	**61.9**	40.1	44.2	51.1	53.4	42.4	54.8
6mvm	45.7	43.2	47.2	43.1	43.7	42.3	49.0	43.3	42.5	43.5	44.6	45.2	43.6	43.5	44.9	**47.1**	41.3	45.0	48.8	43.6	52.7
6mvn	44.9	41.8	42.5	42.0	38.8	37.9	42.7	40.8	40.0	41.0	40.6	40.4	40.0	40.7	41.0	43.7	**42.0**	44.2	44.8	41.4	47.5
6mwh	44.8	42.5	44.0	46.9	43.9	44.9	46.3	45.4	45.8	43.5	44.5	45.0	42.8	43.7	42.4	44.9	44.6	**49.8**	48.0	43.8	52.8
6mwl	46.0	44.0	45.0	44.7	43.8	43.6	44.4	44.2	44.3	43.8	45.6	43.6	44.3	46.0	45.7	46.0	46.2	46.9	**46.5**	43.6	53.5
6mww	51.7	49.2	49.9	48.2	49.0	49.0	49.4	49.2	49.1	49.4	49.2	48.8	47.6	47.6	46.3	52.1	53.2	51.8	55.7	**50.8**	61.3
6mwz	51.7	50.5	51.3	49.9	50.2	47.0	51.1	51.0	50.9	51.3	49.8	49.5	47.3	48.2	49.6	52.4	53.4	52.0	53.2	51.3	**61.5**

Table S10: Characterization of LasR Inhibitors used in the optimization of the Virtual Screening Protocol

	Mol_Name	Source	REF	SMILE
1	C_1	Literature	[1]	CCCCCC(=O)CC(=O)NC1CCOC1=O
2	C_2a	Literature	[2]	Clc1ccc(cc1)C1OC(=O)c2c(C1)cc(cc2)C(=O)Nc1ccc(c(c1)C)C
3	C_3	Literature	[2]	CCC(C)C1=CC=C(OCCOC2=C(\C=N/N3C=NN=C3)C=C(Cl)C=C2)C=C1
4	C_7a	Literature	[2]	O=C(CCCS(=O)(=O)C1=CC=CC=C1)NC1COC(=O)C1
5	C_8	Literature	[1]	O=C(Cc1ccc(cc1)Br)NC1CCOC1=O
6	C_9	Literature	[1]	O=C(NC1CCOC1=O)CCCc1c[nH]c2c1cccc2
7	C_A3	Literature	[1]	CCCCCCCC(=O)NC1CCOC1=O
8	C_A4	Literature	[1]	CCCCCCCCCC(=O)NC1CCOC1=O
9	C_B11	Literature	[1]	O=C(NC1CCOC1=O)CCC1CCCCC1
10	C_B14	Literature	[1]	O=C(NC1CCOC1=O)CCc1cc2c([nH]1)cccc2
11	C_B7	Literature	[1]	O=C(NC1CCOC1=O)CCc1ccc(cc1)Br
12	Betulin	Literature	[3]	CC(=C)C1CCC2(C1C3CCC4C5(CCC(C(C5CCC4(C3(CC2)C)C)(C)C)O)C)CO
13	Butein	Literature	[4]	C1=CC(=C(C=C1C=CC(=O)C2=C(C=C(C=C2)O)O)O)O
14	C_C10	Literature	[1]	O=C(Cc1ccc(cc1)I)NC1CCOC1=O
15	C_C11	Literature	[1]	O=C(NC1CCOC1=O)Cc1cccc(c1)I
16	C_C14	Literature	[1]	O=C(N[C]1[C][C]OC1=O)[C]c1cccc(c1)N([O])[O]
17	C19	Literature	[5]	CCCCCCCCCCNC(=O)CC(=O)c1ccco1
18	C1	Literature	[6]	O=c1[nH]cnc2c1nn[nH]2
19	C20	Literature	[5]	CCCCCCCCCCNC(=O)CC(=O)c1cccs1
20	C27	Literature	[5]	[C][C][C][C][C][C][C][C]NC(=O)CC(=O)c1ccccc1
21	C28	Literature	[5]	[C][C][C][C][C][C][C][C][C]NC(=O)CC(=O)c1ccccc1
22	C29	Literature	[5]	[C][C][C][C][C][C][C][C][C][C]NC(=O)CC(=O)c1ccccc1
23	C39	Literature	[5]	CCCCCCCCCCCNC(=O)CC(=O)c1ccco1
24	C40	Literature	[5]	CCCCCCCCCCCCNC(=O)CC(=O)c1ccco1
25	C41	Literature	[5]	CCCCCCCCCCCCCNC(=O)CC(=O)c1ccco1
26	C42	Literature	[5]	CCCCCCCCCCCNC(=O)CC(=O)c1cccs1
27	C43	Literature	[5]	C1=CC=C(C(=O)CC(=O)NCCCCCCCCCCC)S1
28	C44	Literature	[5]	CCCCCCCCCCCCCNC(=O)CC(=O)c1cccs1
29	C_C6	Literature	[1]	O=C(NC1CCOC1=O)Cc1cccc(c1)Cl
30	Catechin 7-xyloside	Literature	[4]	C1C(C(OC2=CC(=CC(=C21)O)OC3C(C(C(CO3)O)O)O)C4=CC(=C(C=C4)O)O)O
31	C_C8	Literature	[1]	O=C(NC1CCOC1=O)Cc1cccc(c1)Br
32	Chlorogenic acid	Literature	[7]	C1C(C(C(CC1(C(=O)O)O)OC(=O)C=CC2=CC(=C(C=C2)O)O)O)O
33	CHEMBL122890	ChEMBL	[8]	C=CCSS/C=C/C[S+]([O-])CC=C
34	CHEMBL1818521	ChEMBL	[9]	O=C(CCCCCCCCCNC(=O)CCl)CC(=O)N[C@H]1CCOC1=O
35	CHEMBL1818522	ChEMBL	[9]	CCCCCCCCCC(=O)CC(=O)NC1CCCCC1=O
36	CHEMBL1818523	ChEMBL	[9]	CCCCCCCCCCCCn1nnc(CC(=O)O)n1
37	CHEMBL1818524	ChEMBL	[9]	CCCCCCCCCCCC(=O)N[C@H]1CCSC1=O
38	CHEMBL1823930	ChEMBL	[10]	CCCC(=O)CC(=O)N[C@H]1CCSC1=O

39	CHEMBL1823933	ChEMBL	[11]	O=C(CCCCCCCCN=C=S)CC(=O)N[C@H]1CCOC1=O
40	CHEMBL1823934	ChEMBL	[11]	O=C(CCCCCCCCCN=C=S)CC(=O)N[C@H]1CCOC1=O
41	CHEMBL1823935	ChEMBL	[11]	O=C(CCCCCCCCCCN=C=S)CC(=O)N[C@H]1CCOC1=O
42	CHEMBL1823936	ChEMBL	[11]	O=C(CCCCCCCCNC(=O)CBr)CC(=O)N[C@H]1CCOC1=O
43	CHEMBL1823937	ChEMBL	[11]	O=C(CCCCCCCCCNC(=O)CBr)CC(=O)N[C@H]1CCOC1=O
44	CHEMBL1823938	ChEMBL	[11]	O=C(CCCCCCCCCCNC(=O)CBr)CC(=O)N[C@H]1CCOC1=O
45	CHEMBL1823939	ChEMBL	[11]	O=C(CCCCCCCCNC(=O)CCl)CC(=O)N[C@H]1CCOC1=O
46	CHEMBL1823941	ChEMBL	[11]	O=C(CCCCCCCCCCNC(=O)CCl)CC(=O)N[C@H]1CCOC1=O
47	CHEMBL1823945	ChEMBL	[8]	O=C(Nc1ccccc1NC(=O)c1cccc(Cl)c1)c1cccc(Cl)c1
48	CHEMBL258912	ChEMBL	[8]	O=C(Cc1cccc(I)c1)N[C@H]1CCOC1=O
49	CHEMBL259352	ChEMBL	[11]	CCCCCCCC(=O)N[C@H]1CCOC1=O
50	CHEMBL264944	ChEMBL	[11]	O=C(CCc1ccc(Br)cc1)N[C@H]1CCOC1=O
51	CHEMBL3235593	ChEMBL	[12]	CCCCCCCCCCC(=O)CC(=O)O[C@H]1CCOC1=O
52	CHEMBL3403857	ChEMBL	[8]	CCCCc1cn(CC(=O)N[C@H]2CCOC2=O)nn1
53	CHEMBL3403871	ChEMBL	[8]	Nc1cccc(-n2cc(CCC(=O)N[C@H]3CCOC3=O)nn2)c1
54	CHEMBL374107	ChEMBL	[8]	Nc1nc(O)c2[nH]nnc2n1
55	CHEMBL405298	ChEMBL	[9]	O=C(Cc1cccc([N+](=O)[O-])c1)N[C@H]1CCOC1=O
56	CHEMBL408326	ChEMBL	[12]	CCCCCCCCCCCS(=O)(=O)N[C@H]1CCOC1=O
57	CHEMBL4282406	ChEMBL	[8]	CCCCCCCOc1ccc(C(=O)N[C@H]2CCOC2=O)cc1
58	CHEMBL4284314	ChEMBL	[8]	O=C(N[C@H]1CCOC1=O)c1ccc(-n2cc(CSc3ccccc3)nn2)cc1
59	CHEMBL4285396	ChEMBL	[12]	CCCCCCCCCC(=O)CC(=O)NCC1CCCO1
60	CHEMBL4286873	ChEMBL	[8]	O=C(CCCC1CCCCC1)N[C@H]1CCOC1=O
61	CHEMBL4289544	ChEMBL	[8]	O=C(CCSc1ccc(Cl)cc1)N[C@H]1CCOC1=O
62	CHEMBL4293495	ChEMBL	[8]	CCCCCCCCNC(=O)CC(=O)c1ccccc1
63	CHEMBL437	ChEMBL	[8]	Nc1ccc(S(=O)(=O)Nc2nccs2)cc1
64	CHEMBL463321	ChEMBL	[11]	CCCCCC(=O)CC(=O)N[C@H]1CCOC1=O
65	CHEMBL468624	ChEMBL	[11]	O=C(Cc1ccc(C(F)(F)F)cc1)N[C@H]1CCOC1=O
66	CHEMBL468790	ChEMBL	[11]	O=C(Cc1ccc(I)cc1)N[C@H]1CCOC1=O
67	CHEMBL473592	ChEMBL	[13]	O=C(CC(=O)N[C@H]1CCOC1=O)Cc1ccccc1
68	CHEMBL503197	ChEMBL	[11]	O=C(COc1ccc(OC(F)(F)F)cc1)N[C@H]1CCOC1=O
69	CHEMBL573744	ChEMBL	[13]	O=C(CCCc1c[nH]c2ccccc12)N[C@H]1CCOC1=O
70	CHEMBL573745	ChEMBL	[13]	O=C(CC1C=CCC1)N[C@H]1CCOC1=O
71	CHEMBL575294	ChEMBL	[13]	O=C(Cc1ccc(Br)cc1)N[C@H]1CCOC1=O
72	CHEMBL584972	ChEMBL	[13]	CCCCCCC(=O)N[C@H]1CCOC1=O
73	CHEMBL8755	ChEMBL	[9]	CCCCCCCCCCCCC(=O)N[C@H]1CCOC1=O
74	CHEMBL8799	ChEMBL	[11]	CCCCCCCCCC(=O)N[C@H]1CCOC1=O
75	Chlorzoxazone	Literature	[14]	C1=CC2=C(C=C1Cl)NC(=O)O2
76	C_D15	Literature	[1]	O=C(NC1CCOC1=O)COc1ccc(cc1)OC(F)(F)F
77	C_E16	Literature	[1]	O=C(NC1CCOC1=O)COc1cccc(c1)C
78	C_E20	Literature	[1]	O=C(NC1CCOC1=O)COc1ccc(cc1)Cl

79	C_E21	Literature	[1]	O=C(NC1CCOC1=O)COc1ccc(cc1)Br
80	C_E22	Literature	[1]	O=C(NC1CCOC1=O)COc1ccc(cc1)I
81	C_E26	Literature	[1]	O=C(NC1CCOC1=O)CCc1ccc(cc1)C
82	C_E27	Literature	[1]	O=C(NC1CC=C1==)CCc1cccc(c1)C
83	C_E28	Literature	[1]	COc1ccc(cc1)CCC(=O)NC1CCOC1=O
84	C_E29	Literature	[1]	O=C(NC1CCOC1=O)CCc1ccc(cc1)F
85	C_E30	Literature	[1]	O=C(NC1CCOC1=O)CCc1ccc(cc1)Cl
86	C_E31	Literature	[1]	O=C(NC1CCOC1=O)CCc1ccc(cc1)Cl
87	C_E33	Literature	[1]	O=C(NC1CCOC1=O)CCc1cccc(c1)I
88	C_E37	Literature	[1]	[O]N(c1ccc(cc1)CCC(=O)N[C]1[C][C]OC1=O)[O]
89	C_E38	Literature	[1]	O=C(N[C]1[C][C]OC1=O)CCc1cccc(c1)N([O])[O]
90	F1	Literature	[6]	O[CH](=O)[C]([C]c1cccc(c1)F)N

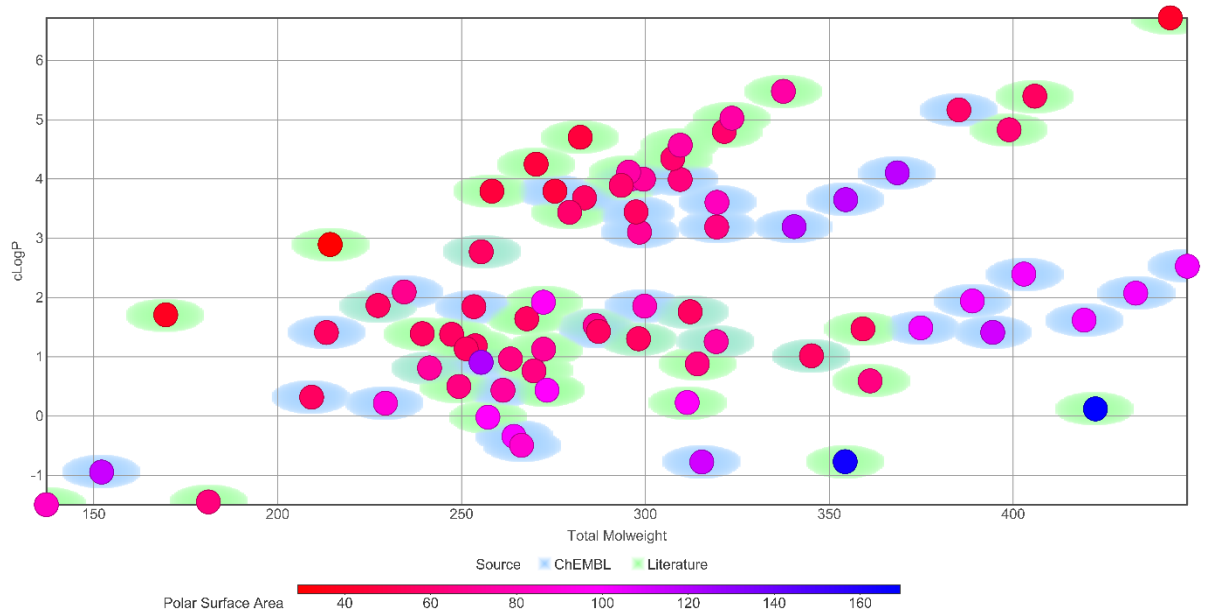

Figure S2: General characterization of LasR inhibitors used in this study according to Molecular Weight, cLogP, Polar Surface Area and source (ChEMBL or Literature)

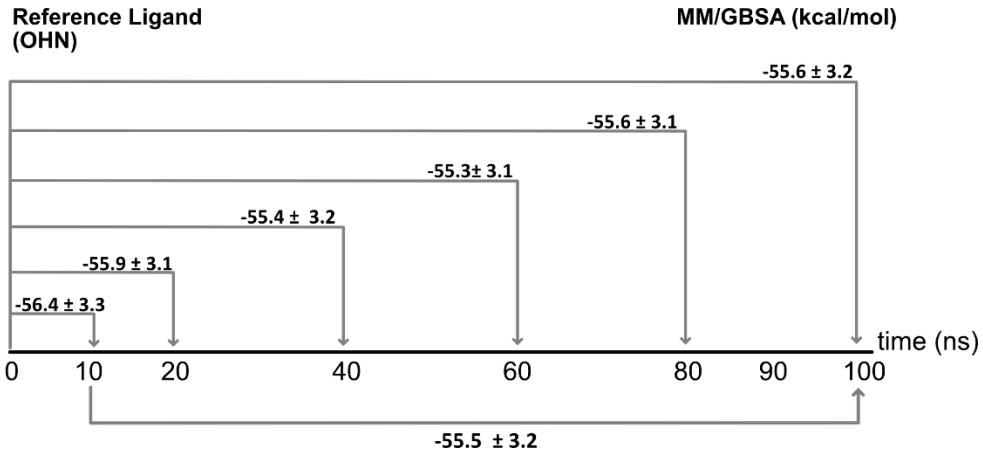

Figure S3: MM/GBSA results for different lengths of the MD simulation, showing binding free energy convergence, for the reference ligand, the original autoinducer.

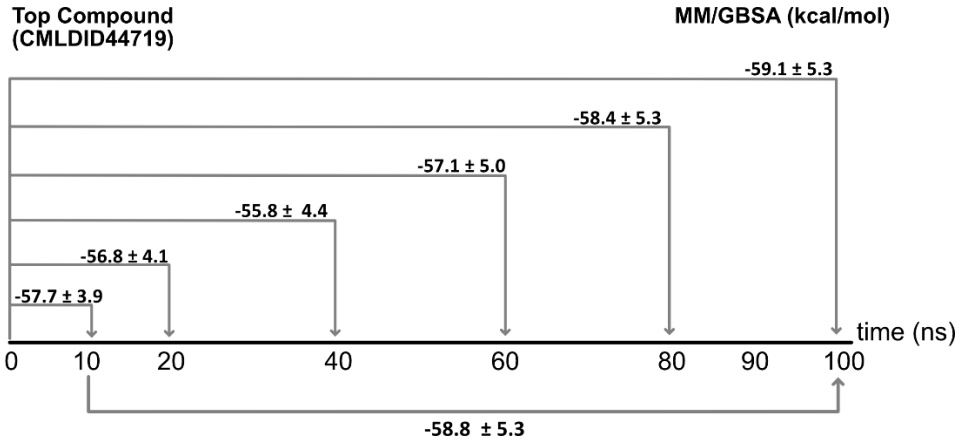

Figure S4: MM/GBSA results for different lengths of the MD simulation, showing binding free energy convergence, for the top scoring compound, CMLDID44719.

Table S11: Full MM/GBSA results, complementing the information in Figure 10, expressed in kcal/mol.
VDW – Van Der Walls; EEL – Electrostatic Energy as calculated by MM force field; EGB – polar solvation free energy; Esurf – apolar solvation free energy. ΔG_{total} – Final estimated Free Energy calculated from the remaining terms.

								MM/GBSA (kcal/mol)
Source	**Compound**	**VDW**	**EEL**	**EGB**	**Esurf**	**ΔG_{gas}**	**$\Delta G_{solvent}$**	**ΔG_{total}**
PDB	C12-HSL	-52.42	-47.95	52.19	-7.36	-100.37	44.83	**-55.54 ± 3.17**
Known Actives	C39	-55.54	-34.16	44.33	-7.69	-89.70	36.64	**-53.06 ± 3.13**
	C44	-59.46	-40.77	47.84	-8.24	-100.23	39.60	**-60.63 ± 3.61**
	CHEMBL1818524	-52.27	-40.37	41.25	-7.35	-92.64	33.90	**-58.74 ± 3.80**
	CHEMBL4284314	-60.56	-39.38	53.00	-7.69	-99.94	45.30	**-54.64 ± 3.70**
Scubidoo	S18963650	-58.33	-55.25	61.72	-7.12	-113.58	54.60	**-58.98 ± 4.34**
	S2256786	-54.39	-12.97	32.05	-6.66	-67.36	25.40	**-41.97 ± 3.30**
	S2479691	-57.10	-203.68	210.84	-6.99	-260.78	203.84	**-56.93 ± 3.30**
	S10681819	-46.07	-377.76	380.33	-6.16	-423.83	374.18	**-49.66 ± 3.29**
	S160883	-61.48	-24.11	43.20	-7.16	-85.59	36.03	**-49.56 ± 2.99**
FDA Approved	Inapsine	-55.55	-203.24	208.90	-7.24	-258.79	201.66	**-57.13 ± 3.64**
	Trazodone	-56.77	-189.73	200.40	-6.58	-246.50	193.82	**-52.68 ± 3.06**
	Salmeterol	-66.12	-208.26	218.30	-9.41	-274.38	208.90	**-65.49 ± 5.50**
	Pletal	-59.50	-8.34	26.12	-6.80	-67.84	19.33	**-48.51 ± 3.44**
IBS Natural Products	STOCK1N-58049	-56.27	-8.05	30.25	-6.65	-64.32	23.60	**-40.72 ± 2.94**
	STOCK1N-94464	-57.01	-172.93	189.03	-7.21	-229.95	181.83	**-48.12 ± 5.13**
	STOCK1N-76104	-59.96	-32.95	49.01	-7.17	-92.91	41.85	**-51.06 ± 3.84**
	STOCK1N-69966	-58.14	-46.61	57.62	-7.10	-104.75	50.52	**-54.23 ± 3.15**
	STOCK1N-65175	-58.33	-55.25	61.72	-7.12	-113.58	54.60	**-58.98 ± 4.34**
Chimiotheque	AB-00033696	-57.36	45.55	-27.40	-7.87	-11.81	-35.27	**-47.08 ± 6.14**
	AB-00020966	-59.19	85.44	-57.59	-7.69	26.25	-65.28	**-39.02 ± 4.21**
	AB-00009902	-64.95	-30.46	53.11	-8.46	-95.41	44.65	**-50.75 ± 4.26**
	AB-00013004	-56.60	85.73	-66.17	-7.19	29.12	-73.36	**-44.24 ± 4.97**
	AB-00029524	-59.34	-193.37	209.80	-7.86	-252.72	201.94	**-50.78 ± 4.10**
Chemoteca	CMLDID16203	-68.75	-28.76	48.90	-8.09	-97.51	40.81	**-56.70 ± 3.01**
	CMLDID55632	-61.01	-32.53	48.68	-7.30	-93.54	41.38	**-52.16 ± 2.91**
	CMLDID15042	-59.61	-30.49	43.75	-7.18	-90.10	36.56	**-53.54 ± 3.21**
	CMLDID44719	-71.86	-44.28	65.68	-8.39	-116.14	57.29	**-58.85 ± 5.29**
	CMLDID4027	-61.04	-205.26	222.49	-6.74	-266.31	215.75	**-50.56 ± 2.94**
	CMLDID58966	-62.51	-33.79	50.79	-7.24	-96.31	43.55	**-52.76 ± 2.82**
	CMLDID24389	-62.58	-40.44	55.33	-7.80	-103.03	47.53	**-55.49 ± 3.72**
	CMLDID53434	-63.49	-31.62	50.30	-7.83	-95.11	42.47	**-52.64 ± 3.59**
	CMLDID36658	-59.95	-23.00	43.39	3.63	-82.96	36.41	**-46.55 ± 3.89**
	CMLDID18416	-57.38	-22.84	40.04	-6.98	-80.22	33.07	**-47.15 ± 4.21**

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