Electronic Supplementary Information for

Detection of targeted bacteria species on filtration membranes

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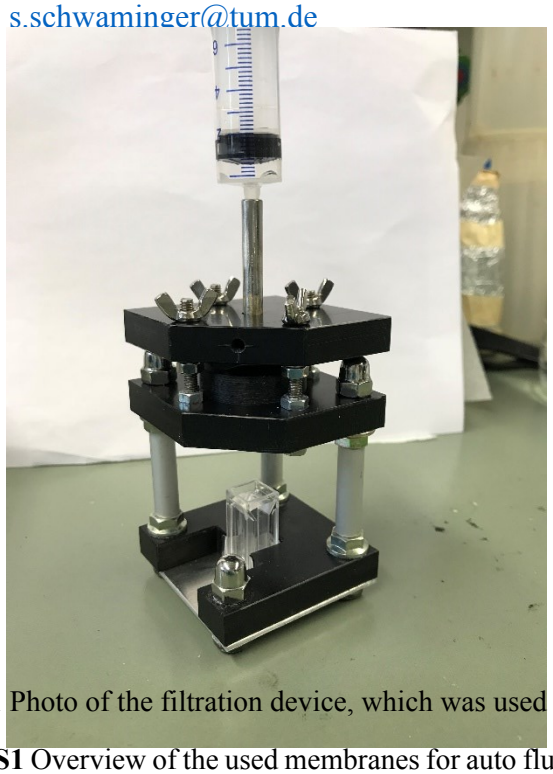

Fig. S1 Photo of the filtration device, which was used for the experiments.

Table S1 Overview of the used membranes for auto fluorescence, permeability and bacterial enrichment experiment.

Abbreviation	Company	Model	Material	Pore size (µm)
Pall_F1	Pall	Supor 200	Polyethersulfone	0.2
Pall_F2	Pall	Supor 450	Polyethersulfone	0.45
Pall_F3	Pall	Metricel	GN-6 Mixed cellulose ester	0.45
Pall_F4	Pall	Ultipor N	Nylon 6,6	0.45
WHAT_F1	Whatman	Anodisc 25	Aluminium matrix, bonded to PP ring	0.2
WHAT_F2	Whatman	Nuclepore, Track Etched	Polycarbonate, track-etched	0.4
WHAT_F3	Whatman	Nuclepore, Track Etched	Polycarbonate, track-etched	0.2
WHAT_F4	Whatman	Cyclopore Black	Polycarbonate	0.2
WHAT_F5	Whatman	GF/C	Glass microfiber filter without binder	
WHAT_F6	Whatman	Nuclepore Track-Etch Membrane	Polycarbonate	0.4

WHAT_F7	Whatman	Cyclopore Track Etched Membrane	Polycarbonate Black	0.4
NAL_F1	Nalgene	Membrane filter, gridded, CN, sterile, grey	Cellulose nitrate	0.45
NAL_F2	Nalgene	Membrane filter, non-sterile CA	Cellulose acetetate	0.45
SAR_F1	Sartorius	Membrane filter with grid	Cellulose nitrate	0.2
SAR_F2	Sartorius	Typ 154	Polyethersulfone	0.2
SAR_F3	Sartorius	Typ 154	Polyethersulfone	0.45
SAR_F4	Sartorius	Typ 111	Cellulose acetate	0.45
SAR_F5	Sartorius	Typ 111	Cellulose acetate	0.2
MIL_F1	Millipore	Nitrocellulose	Nitrocellulose	0.45
i3_F1	i3	Flexipor	Aluminium oxide	0.2
i3_F2	i3	Trackpor, gold-coated	Polycarbonate, gold-coated	0.8

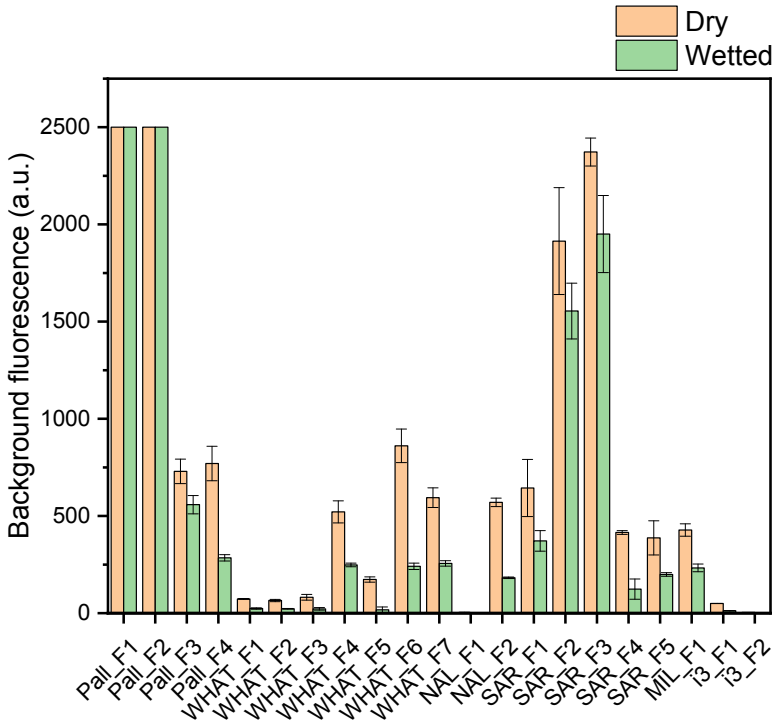

Fig. S2 Autofluorescence studies of different membranes tested in dry and wetted state with an ESElog USB fluorescence detector by Qiagen. The fluorescence excitation was set to 480 nm and the fluorescence signal was detected at 520 nm.

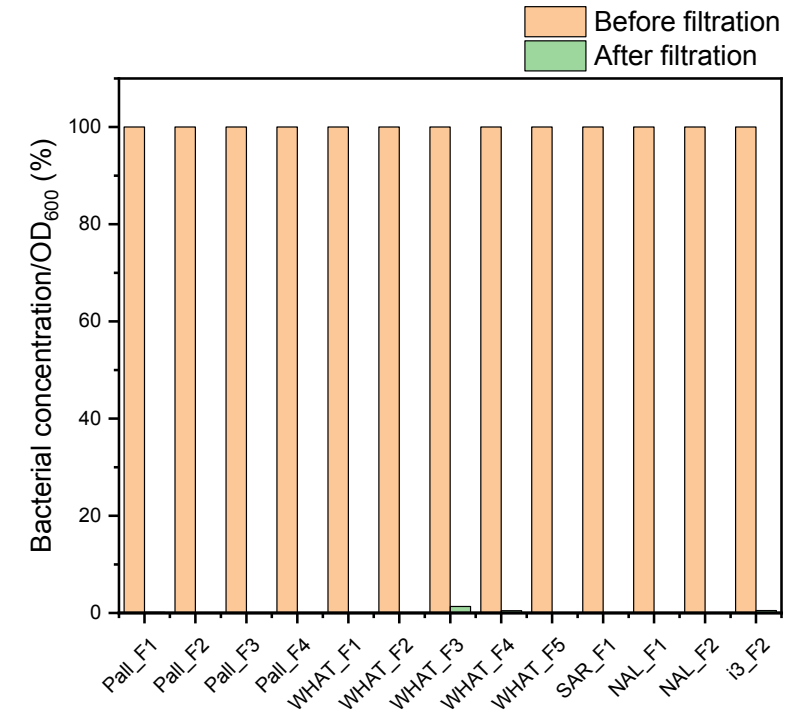

Fig. S3 Permeation experiments of *E. coli* through different membrane filter. An OD_{600} of 0.2 was used in the feed and set to 100%.

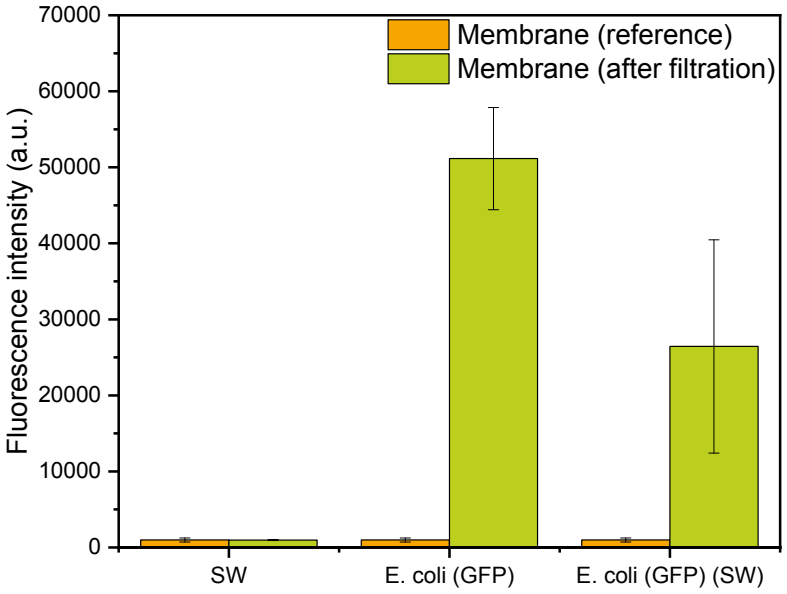

Fig. S4 Filtration experiments of *E. coli* containing green fluorescent protein (GFP) through (WHAT_F2) membrane filter. An OD_{600} of 0.004 was used for the filtration experiments. Therefore, bacteria were diluted with either PBS (pH 7.4) or surface water (SW) from Garching (pH 8). Filtration with PBS buffer is used as membrane (reference). All samples were measured in triplicates with a microplate reader (Tecan, Germany) with excitation at 480 and emission at 520 nm.