

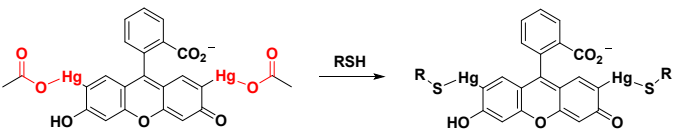
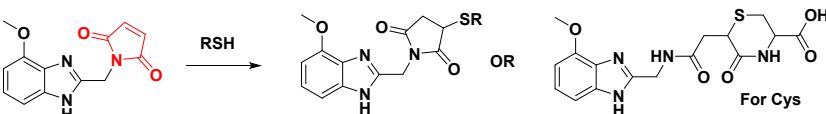
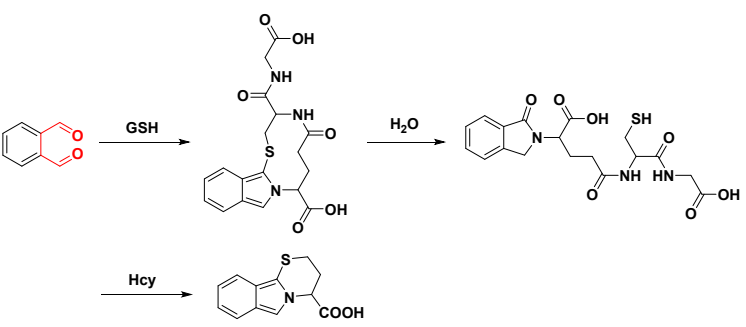
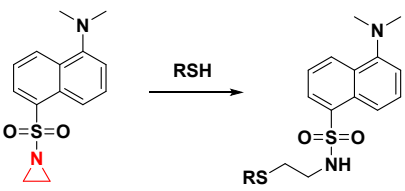
# The chronological evolution of small organic molecular fluorescent probes for thiols

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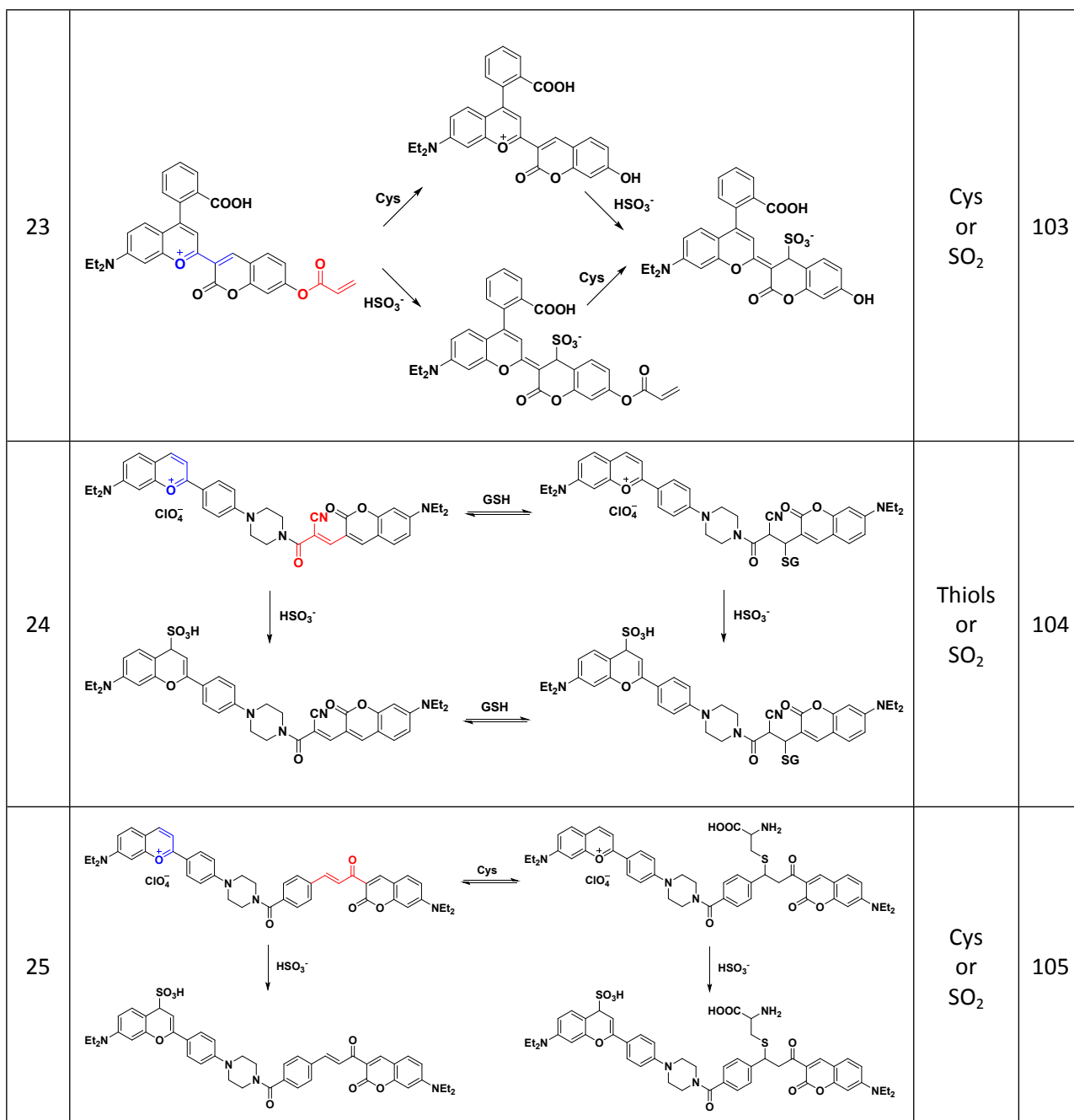
## I. Reaction mechanisms of the probes with thiols presented in the text.

NO.	Reaction motif	Target	Ref.
1		Thiols	25-27
2		Thiols	28-30
3		GSH or Hcy	41-43
4		Thiols	34

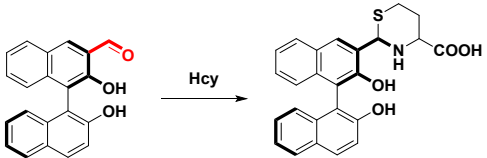
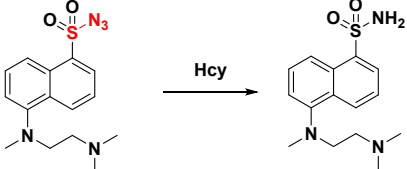
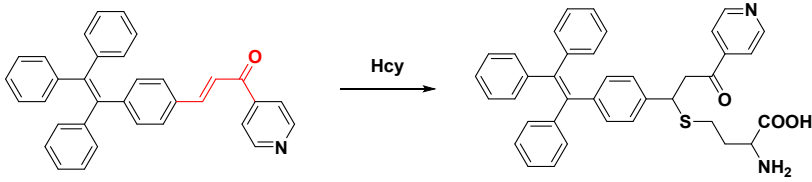
5		Thiols	45
6		Thiols	5
7		Cys and Hcy	6, 46, 47, 58
8		Thiols	35
9		Thiols	36
10		Thiols	59
11		Cys and Hcy Hcy specific in pH 6.0	78-80, 107, 110

12		Thiols	37
13		Thiols	60
14		Thiols	53
15		GSH	77
16		Cys or Hcy	82
17		GSH	83

18	<p>For Cys      For Hcy      For GSH</p>	Cys or GSH	85
19	<p><math>R = \text{OH} \quad \text{CH}_3\text{COO}</math></p>	Thiols	94
20		Thiols	96
21	<p><math>R = \text{N} \quad \text{N} \quad \text{NH}_2</math>      <math>R' = \text{N} \quad \text{N} \quad \text{N} \quad \text{PPh}_3</math></p>	Thiols	95, 97, 98
22	<p>Cys      <math>\text{SO}_3^{2-}</math></p>	Cys or $\text{SO}_2$	101



<p>26</p>	<p>Reaction scheme for compound 26 showing two pathways:</p> <ul style="list-style-type: none"> <li><b>Top Pathway:</b> Starting material reacts with <math>\text{Cys/Hcy}</math> to form intermediate (a), which is then converted to (c) by <math>\text{SO}_3^{2-}</math>.</li> <li><b>Bottom Pathway:</b> Starting material reacts with <math>\text{GSH}</math> to form intermediate (a), which is then converted to (c) by <math>\text{SO}_3^{2-}</math>. Additionally, the GSH pathway leads to products (d) and (e).</li> </ul>	<p>Cys or GSH or <math>\text{SO}_2</math></p>	<p>106</p>
<p>27</p>	<p>Reaction scheme for compound 27 showing the conversion of a starting material to a product with a <math>\text{COOH}</math> group using <math>\text{Hcy}</math>.</p>	<p>Hcy</p>	<p>109</p>

28	 <p>Reaction 28: A complex polycyclic aromatic hydrocarbon (left) with a hydroxyl group and an aldehyde group reacts with Hcy to form a thioether-linked product (right) with a carboxylic acid group.</p>	Hcy	108
29	 <p>Reaction 29: A sulfonamide derivative with a diazonium group (left) reacts with Hcy to form a sulfonamide derivative with an amino group (right).</p>	Hcy	68
30	 <p>Reaction 30: A complex molecule with a pyridine ring and a ketone group (left) reacts with Hcy to form a thioether-linked product (right) with a carboxylic acid and an amino group.</p>	Hcy	111

## II. The reported reviews for thiols fluorescent detection.

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