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Signaling by sulfur-containing molecules. Quantitative aspects

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## Highlights

Thermodynamic parameters are presented for organic and inorganic sulfur compounds

Formation of RSS<sup>-</sup> from RSSR and HS<sup>-</sup> is only slightly favorable

Formation of SSNO<sup>-</sup> *in vivo* is kinetically unlikely.

Polysulfur compounds are generally unstable with respect to disproportionation, with  $S_{8(s)}$  as one of the products.

TOC

pH 7:

$RSSR + HS^- \rightarrow RSS^- + RSH$	$\Delta G^{o'} = +6 \text{ kJ/mol}$
$RSNO + HS^- \rightarrow RSH + SNO^-$	$\Delta G^{\circ\prime} = -16 \text{ kJ/mol}$
$RSNO + HS^- \rightarrow RSS^- + HNO$	$\Delta G^{\circ\prime} = +27 \text{ kJ/mol}$
$SNO^- + HS^- + H^+ \rightarrow HSS^- + HNO$	$\Delta G^{o'} = +32 \text{ kJ/mol}$

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