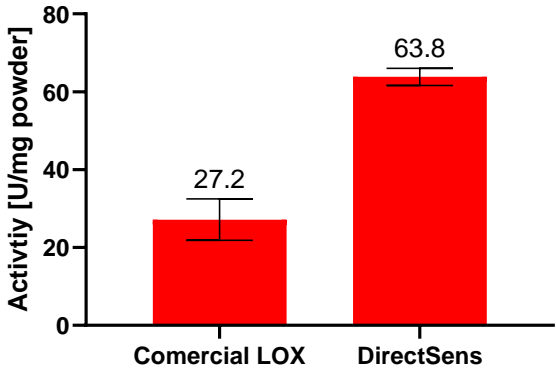




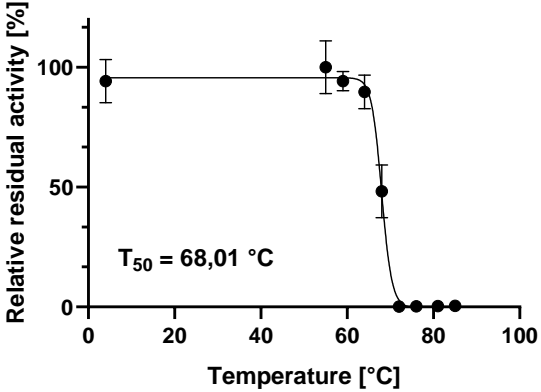
General	<b>LactaZyme Type: LOX Ls</b> Lactate Oxidase enzyme, recombinantly expressed Proprietary sequence, derived by enzyme engineering.		
Structural features	Tetrameric FMN co-factor (1 per active monomer)		
Physical properties	Molecular weight:	~160 kDa, homotetrameric	
calculated	Theoretical Isoelectrical point:	6.0	
	Extinction coefficients: at 280 nm measured in water	30370 M <sup>-1</sup> cm <sup>-1</sup> 0.1% (=1 g/l) = 0.732 Abs@280nm	
	Potential Glycosylation sites	unlikely	
Formulation	Dried Enzyme, Yellow powder;  No additives or stabilizers, buffer salts only, purity > 95%  Formulation details are designated on the container		
Storage recommendation	Store at 2 °C – 8°C  Aliquots can be prepared when dissolved and stored at -20 °C  Stability NOTE:  – Retesting date is indicated on the container  – Single freeze / thaw cycle has shown no deactivation effect.  – Minor precipitate might form when dissolved and can be removed via centrifugation. Activity is not affected.		
Biochemical properties	Activity: ~60 U/mg  Stability: T <sub>50</sub> > 68°C,		
Electrochemical properties	Current response: > 10 µA/mm² at 10 mM Lactate  Shelf life: > 4 weeks at 40°C		
using Peroxide as mediator			

Specific Activity  
[U/ mg Powder]



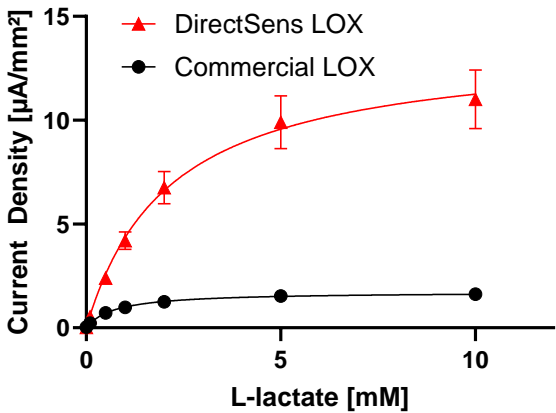
Reaction rate of enzyme assayed for Peroxide production in PBS buffer, pH 7.4, 30 °C at 10 mM Lactate

Thermodynamic Stability



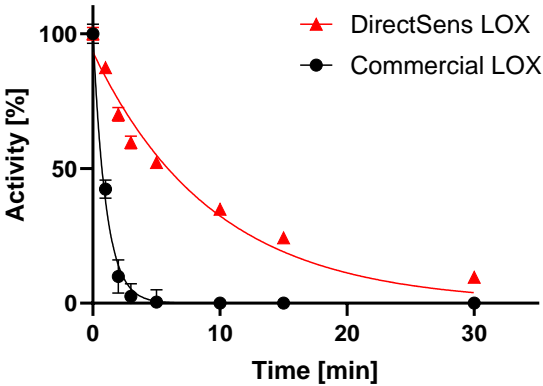
Activity of enzyme samples incubated at given temperatures for 30 min in 11mM PBS . Inset: T<sub>50</sub> derived from sigmoidal fit to the data.

Sensor Calibration H<sub>2</sub>O<sub>2</sub>



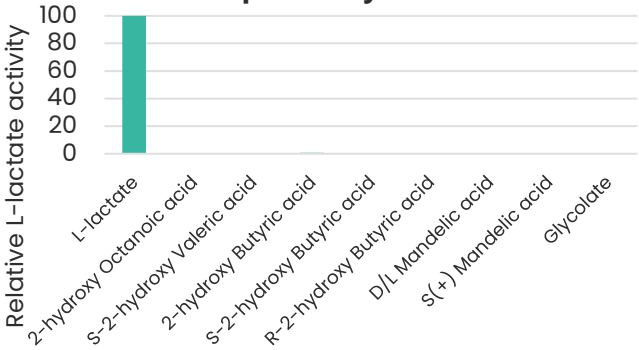
Current response to increasing lactate concentration of the enzyme detecting **peroxide** in electrochemical setup

Half Life at 70°



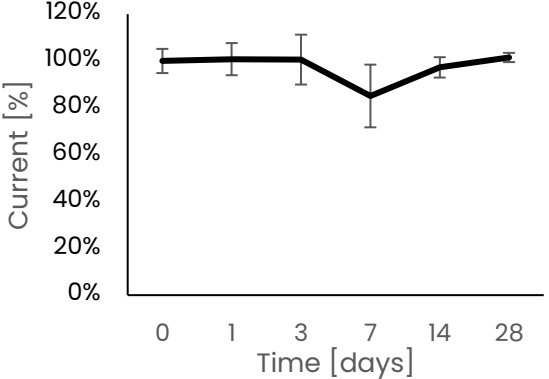
Activity of enzyme (1 mg/mL) samples incubated at 70 °C for given time and assayed in PBS buffer, pH 7.4.

Specificity



Enzyme activities assayed PBS buffer, pH 7.4, 30 °C at 10 mM of all substrates respectively.

Sensor Shelf Life



Sensor response tested after storage at 40 °C.