

Specification

**XTT Sodium Salt *BioChemica***

**A2240**

<b>Physical Description:</b>	Solid
<b>Product Code:</b>	A2240
<b>Product Name:</b>	XTT Sodium Salt <i>BioChemica</i>
<b>Specifications:</b>	$\lambda_{\text{max}}$ : 283 - 287 nm E 1 %/1 cm, 285 nm: 14800 - 16800 Water: max. 15 %
<b>WGK:</b>	1
<b>Storage:</b>	2-8°C
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>16</sub> N <sub>7</sub> O <sub>13</sub> S <sub>2</sub> Na
<b>M:</b>	673.50 g/mol
<b>CAS:</b>	111072-31-2
<b>CS:</b>	29339980
<b>Comment</b>	<p>XTT is a tetrazolium salt, similar to MTT. Upon enzymatic treatment, the water-insoluble formazan is formed. While the cytotoxic MTT has to be dissolved in DMSO, XTT is water-soluble and not toxic itself. Even if MTT is better metabolized by many cell lines, XTT is sufficiently reduced by the cells in the presence of phenazine methosulfate (PMS). PMS does not influence the turnover of XTT. Depending on the cell line, the optimal conditions are 50 µg XTT and 0.15 - 0.4 µg PMS per 96-plate well (1). XTT is used e. g. for the screening of anti-HIV drugs (2), cytotoxicity tests (3), quantification of TNF-α in bioassays (4) or determination cell damage in fungi, e. g. by antimycotics (5). Serum albumin may lead to an increased signal in the XTT assay. This effect is concentration-dependent is due to a free cysteine residue in albumin. Glutathione and cysteine show similar effects. Interference by albumin may be reduced by addition of N-ethylmaleimide (6). We recommend to prepare a stock solution in an aqueous solution (1 mg/ml), such as e.g. PBS or medium without serum.</p>
<b>Bibliography</b>	<p>(1)Scudiero, D.A. <i>et al.</i> (1988) <i>Cancer Res.</i> <b>48</b>, 4827-4833Evaluation of a soluble Tetrazolium/Formazan assay for cell growth and drug sensitivity in culture using human and other tumor cell lines. (2)Weislow, O.S. <i>et al.</i> (1989) <i>J. Natl. Cancer Inst.</i> <b>81</b>, 577-586New soluble-Formazan assay for HIV-1 cytopathic effects\): Application to high-flux screening of synthetic and natural products for AIDS-antiviral activity. (3)Jost, L.M. <i>et al.</i> (1992) <i>J. Immunol. Methods</i> <b>147</b>, 153-165Improved short- and long-term XTT-based colorimetric cellular cytotoxicity assay for melanoma and other tumor cells. (4)Nargi, F.E. &amp; Yang, T.J. (1993) <i>J. Immunol. Methods</i> <b>159</b>, 81-91Optimization of the L-M cell bioassay for quantitating tumor necrosis factor α in serum and plasma. (5)Meshulam, T. <i>et al.</i> (1995) <i>J. Infect. Dis.</i> <b>172</b>, 1153-1156A simplified new assay for assessment of fungal cell damage with the Tetrazolium dye XTT. (6)Funk, D. <i>et al.</i> (2007) <i>BioTechniques</i> <b>43</b>, 178-186Serum albumin leads to false-positive results in the XTT and the MTT assay.</p>