

## DESCRIPTION

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|---|---|
| <b>Species Reactivity</b>   | Bovine  |
| <b>Specificity</b>  | Detects bovine IL-2 in ELISAs and Western blots. In sandwich immunoassays, less than 0.2% cross-reactivity with recombinant human IL-2, recombinant mouse IL-2, recombinant rat IL-2, recombinant feline IL-2, recombinant canine |
| <b>Source</b>   | Polyclonal Goat IgG   |
| <b>Purification</b>   | Antigen Affinity-purified   |
| <b>Immunogen</b>  | <i>E. coli</i> -derived recombinant bovine IL-2<br>Ala21-Thr155<br>Accession # P05016   |
| <b>Conjugate</b>  | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm   |
| <b>Formulation</b>  | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide  |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |   |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

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| <b>ELISA Capture (Matched Antibody Pair)</b>   | Optimal dilution of this antibody should be experimentally determined. |
| <b>ELISA Detection (Matched Antibody Pair)</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>                            | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</b>                     | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

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|--------------------------------|---|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Bovine Interleukin-2 (IL-2) is a 15 kDa,  $\alpha$ -helical, single chain, potentially glycosylated polypeptide that has potent stimulatory activity for antigen-activated T cells (1-5). The molecule is synthesized as a 155 amino acid (aa) precursor that contains a 20 aa signal peptide plus a 135 aa mature segment that is possibly O-glycosylated (4, 5). The mature region has multiple  $\alpha$ -helices and one intrachain disulfide bond. Mature bovine IL-2 is 64%, 60%, 49%, 50%, 72%, 63% and 67% to mature human, canine, mouse, rat, porcine, equine, and feline IL-2, respectively. Mammalian cells known to express IL-2 include CD4<sup>+</sup> and CD8<sup>+</sup> T cells, visceral smooth muscle cells, eosinophils,  $\gamma\delta$  T cells, B cells and dendritic cells. The receptor for IL-2 is complex and consists of three distinct subunits in varying combinations (6, 7). Two of these are ligand-binding and are termed IL-2 R $\alpha$  and IL-2 R $\beta$ . IL-2 R $\alpha$  is 55 kDa and binds IL-2 with low affinity. IL-2 R $\beta$  is 75 kDa and binds IL-2 with intermediate affinity. Signal transduction is performed by both IL-2 R $\beta$  and a 64 kDa common gamma chain ( $\gamma_c$ ). This signal transducing common gamma chain does not bind IL-2, but does heterodimerize with IL-2 R $\beta$  to form a functional IL-2 receptor. The complex heterotrimeric  $\alpha$ - $\beta$ - $\gamma_c$  receptor may arise from IL-2 binding to preformed R $\alpha$ -R $\beta$  complexes (8). Functionally, IL-2 is best known for its autocrine and paracrine activity on T cells. It drives resting T cells into active G1, inducing IL-2 and IL-2 R $\alpha$  synthesis and cell proliferation (7). It also promotes Fas-induced death of naïve CD4<sup>+</sup> T cells, while having minimal effect on activated CD4<sup>+</sup> memory lymphocytes. Finally, IL-2 seems to play a central role in the expansion and maintenance of CD4<sup>+</sup> CD25<sup>+</sup> regulatory T cells. Thus, IL-2 may be a key cytokine in the natural suppression of autoimmunity (9, 10).

## PRODUCT SPECIFIC NOTICES

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