Data sheet

**Dr1**<sub>His</sub>
Down-regulator of transcription 1, NC2<sub>β</sub>, 19 kDa
human, recombinant, *E. coli*

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Amount</th>
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<tr>
<td>PR-723</td>
<td>10 µg</td>
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**Description**

Dr1 is a general negative regulator of class II and class III gene expression. It binds to the basic repeat domain of TBP on promoter DNA and can prevent the RNA polymerase II holoenzyme, or its TFII B and/or TFIIA subunits, from assembling into an initiation complex. Dr1 is phosphorylated *in vivo* and this modification affects its interaction with TBP. In addition, Dr1 interacts with the hyperphosphorylated form of Pol II and with the repression domain of the AREB6 repressor.

Dr1 forms a heterodimer complex with DRAP1 through its histone fold domain. More recently it was discovered that Dr1-DRAP1 is a bi-functional basal transcription factor that differentially regulates gene transcription through DPE (downstream promoter elements) or TATA box motifs. It can stimulate transcription *in vitro* from Drosophila promoters containing DPEs, whereas it represses transcription from TATA-containing promoters.

Recombinant Dr1 is isolated from an *E. coli* strain that carries the coding sequence of the human Dr1 under the control of a T7 promoter.

Dr1 has been applied in reconstituted *in vitro* transcription assays and protein-protein interaction assays.

Protein is greater than 95% homogeneous and contains no detectable protease, DNase, and RNase activity.

**Selected References:**


Kim et al. (1995) TATA-binding protein residues implicated in a functional interplay between negative cofactor NC2 (Dr1) and general factors TFIIA and TFII B. *J. Biol. Chem.* 270: 10976.


