# Recombinant Human Estrogen receptor beta (ESR2), partial

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| **Product Code** | CSB-YP007831HU |
| **Relevance** | Nuclear hormone receptor. Binds estrogens with an affinity similar to that of ESR1, and activates expression of reporter genes containing estrogen response elents (ERE) in an estrogen-dependent manner. Isoform beta-cx lacks ligand binding ability and has no or only very low ere binding activity resulting in the loss of ligand-dependent transactivation ability. DNA-binding by ESR1 and ESR2 is rapidly lost at 37 degrees Celsius in the absence of ligand while in the presence of 17 beta-estradiol and 4-hydroxy-tamoxifen loss in DNA-binding at elevated tperature is more gradual. |
| **Abbreviation** | Recombinant Human ESR2 protein, partial |
| **Storage** | The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C. |
| **Uniprot No.** | Q92731 |
| **Alias** | Nuclear receptor subfamily 3 group A member 2 |
| **Product Type** | Recombinant Protein |
| **Immunogen Species** | Homo sapiens (Human) |
| **Purity** | Greater than 90% as determined by SDS-PAGE. |
| **Sequence** | DIKNSPSSLNSPSSYNCSQSILPLEHGSIYIPSSYVDSHHEYPAMTFYSPAVMN YSIPSNVTNLEGGPGRQTTSPNVLWPTPGHLSPLVVHRQLSHLYAEPQKSPW CEARSLEHTLPVNRETLKRKVSGNRCASPVTGPGSKRDAHFCAVCSDYASGY HYGVWSCEGCKAFFKRSIQGHNDYICPATNQCTIDKNRRKSCQACRLRKCYE VGMVKCGSRRERCGYRLVRRQRSADEQLHCAGKAKRSGGHAPRVRELLLDA LSPEQLVLTLLEAEPPHVLISRPSAPFTEASMMMSLTKLADKELVHMISWAKKIP GFVELSLFDQVRLLESCWMEVLMMGLMWRSIDHPGKLIFAPDLVLDRDEGKC VEGILEIFDMLLATTSRFRELKLQHKEYLCVKAMILLNSSMYPLVTATQDADSSR KLAHLLNAVTDALVWVIAKSGISSQQQSMRLANLLMLLSHVRHASNKGMEHLL NMKCKNVVPVYDLLLEMLNAHVLRGCKSSITGSECSPAEDSKSKEGSQNPQS Q |
| **Source** | Yeast |
| **Target Names** | ESR2 |
| **Protein Names** | Recommended name: Estrogen receptor beta Short name= ER-betaAlternative name(s): Nuclear receptor subfamily 3 group A member 2 |
| **Expression Region** | 2-530aa |
| **Notes** | Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week. |

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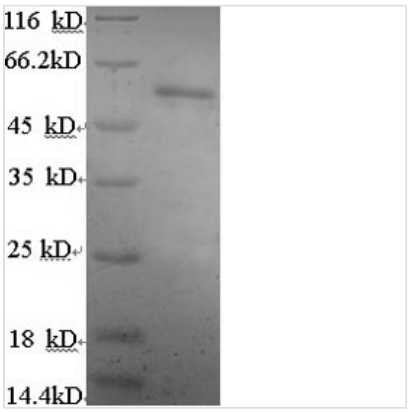
| **Tag Info** | N-terminal 6xHis-tagged |
| **Mol. Weight** | 61.1kDa |
| **Protein Length** | Partial |

**Image**




(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

**Description**

Recombinant Human Estrogen receptor beta (ESR2) comes from yeast expression and includes an N-terminal 6xHis-tag that makes purification and detection much simpler. The protein covers amino acids 2 to 530, which represents a partial but substantial portion of the complete sequence. Purity levels exceed 90% based on SDS-PAGE analysis, though this should provide reliable performance in most downstream work.

Estrogen receptor beta (ERβ) belongs to the nuclear receptor family of intracellular receptors. This protein appears to play an essential role in how estrogens work throughout the body, affecting both gene expression and how cells function. ERβ seems to be involved in reproductive health, cardiovascular processes, and bone maintenance - areas that make it particularly interesting for researchers studying hormone signaling networks.

### Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

### 1. Protein-Protein Interaction Studies Using His-Tag Pull-Down Assays

The N-terminal 6xHis-tag makes this recombinant ESR2 protein well-suited for nickel-affinity pull-down experiments when hunting for binding partners. Since the expressed region (2-530aa) covers most of the receptor, it likely includes the important interaction domains researchers need. The approach is straightforward: immobilize the His-tagged ESR2 on nickel beads, then incubate with cell lysates or purified proteins to fish out whatever binds. With purity above 90%, background contamination during these interaction studies may be less of a concern.

### 2. Antibody Development and Validation

This purified recombinant ESR2 protein could work well as an antigen for creating antibodies specific to human estrogen receptor beta. The combination of high purity and substantial protein length makes it a reasonable choice for animal immunization or screening antibody libraries that already exist. The His-tag also simplifies purification and immobilization in ELISA screening assays, which helps when identifying and confirming antibody specificity. Both monoclonal and polyclonal antibody development appears feasible with this material.

### 3. Biochemical Characterization and Stability Studies

Detailed biochemical analysis becomes possible with this recombinant ESR2 protein - things like thermal stability, pH sensitivity, and finding optimal buffer conditions. Dynamic light scattering, differential scanning fluorimetry, or analytical ultracentrifugation might reveal useful information about the protein's biophysical behavior. The yeast expression background and high purity suggest this protein could handle systematic studies examining how various conditions influence stability and whether aggregation becomes problematic.

### 4. Competitive Binding Assays and Ligand Screening

Even though biological activity hasn't been tested, this recombinant ESR2 protein may still prove useful in competitive binding assays for screening potential ligands or inhibitors. The His-tag allows straightforward immobilization on nickel-coated plates or beads during binding studies. Fluorescence polarization or surface plasmon resonance assays could measure how known ligands bind and help screen compound libraries for new receptor interactions, though results would need careful interpretation given the unknown activity status.

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| **Reconstitution** | We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference. |
| **Shelf Life** | The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.<br>Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C. |