

#### DESCRIPTION

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human/Mouse/Rat                                                                     |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human, mouse, and rat QDPR in Western blots.                                |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Sheep IgG                                                                |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                           |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant human QDPR<br>Ala2-Phe244<br>Accession # P09417 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 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.

**Western Blot** Optimal dilution of this antibody should be experimentally determined.

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <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

QDPR (Quinoid DihydroPteridine Reductase; also DiHydroPteridine Reductase/DHPR) is a 25-26 kDa member of the Short-chain Dehydrogenase/Reductase (SDR) family of enzymes. Its alternative designation (DHPR) should not be confused with the 180-200 kDa dihydropyridine receptor, also known as DHPR, or 120 kDa bacterial dihydroadipicinate reductase, also known as DHPR. QDPR is widely expressed, and found in cells such as fibroblasts, neurons, hepatocytes and lymphocytes. QDPR serves as a generator of a cofactor that is used in both nitric oxide and neurotransmitter production. Tyrosine and tryptophan are precursors for serotonin and dopamine, respectively. These final neurotransmitter endproducts are generated through a two-step process, the first involving the action of Tyr and Trp-specific hydroxylases. These two hydroxylases have an absolute requirement for BH4 (tetrahydrobiopterin), which is generated through the action of QDPR on q-BH2 (quinonoid dihydrobiopterin). Human QDPR is 244 amino acids (aa) in length. It contains one enzymatic region (aa 9-230) plus a utilized acetylation site at Ala2. QDPR functions as a nondisulfide-linked homodimer. There are four potential isoform variants, one that contains a 3 aa insertion after Gly218, another that shows a deletion of aa 36-66, a third that contains a five aa substitution for aa 147-244, and a fourth that utilizes an alternative start site at Met56. Pathologic conditions are associated with single aa substitutions at multiple sites, including Gly17, Gly23, Gln66 and His158. Full-length human QDPR (aa 1-244) shares 93% aa sequence identity with mouse QDPR.

#### PRODUCT SPECIFIC NOTICES

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