

## Product Information

### Anti-FOXP2

Produced in Rabbit, IgG Fraction of Antiserum

Product Number **F 6304**

#### Product Description

Anti-FOXP2 is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 36-53 of human FOXP2, conjugated to KLH via a C-terminal lysine residue. The immunizing sequence is conserved in mouse and rat. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-FOXP2 recognizes FOXP2 by immunoblotting (~80 kDa). Staining of the FOXP2 band in immunoblotting is specifically inhibited by the FOXP2 immunizing peptide.

The superfamily of Forkhead transcription factors (FOX) consists of more than 100 members, with orthologues expressed in a variety of species ranging from yeast to man.<sup>1,2</sup> They are characterized by a common Forkhead (or Winged Helix) domain, a variant of the helix-turn-helix motif.<sup>2,3</sup> Forkhead family members have been shown to play key regulatory roles in embryonic development, differentiation, apoptosis and tumorigenesis.<sup>1-3</sup>

The Forkhead subfamily P (FOXP1, FOXP2, FOXP3 and FOXP4) has been implicated in tumor suppression as well as autoimmunity and development.<sup>4,5</sup> FOXP1 and FOXP2 were isolated from a mouse lung cDNA library, and shown to be highly homologous (80% similarity).<sup>6</sup> Importantly, human FOXP2 was also identified from the study of a family presenting inherited speech and language disorder.<sup>7</sup> FOXP2 transcripts encode for three different isoforms, I, II and III encoding for proteins of 715, 740, and 623 amino acids respectively. FOXP2 contains a polyglutamine tract, which has been implicated in several hereditary neurodegenerative disorders when abnormally expanded.<sup>7,8</sup> FOXP1, FOXP2, and FOXP4 contain a complex N-terminal region responsible for transcriptional repression. This region contains various protein-protein interaction motifs conserved in all three proteins, including a zinc finger and a putative leucine

zipper. The finding that FOXP1, FOXP2, and FOXP3 interact with the corepressor protein C-terminal binding protein 1 (CtBP-1) suggests that the proteins of the FOXP subfamily are at the core of a multiprotein complex that regulates diverse aspects of tissue-restricted gene expression during development.<sup>9</sup> FOXP2 is the first gene relevant to the human ability to develop language, offering an opportunity to study neural mechanisms from a molecular perspective.<sup>7, 10, 11</sup> Missense and nonsense mutations have been identified in families with language impairment. Thus, a point mutation led to the isolation to FOXP2, whereas more recently a truncation was discovered in a family with speech and language difficulties as well.<sup>7, 10</sup>

#### Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

#### Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended.

Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

#### Product Profile

By immunoblotting, a working antibody dilution of a 1:500-1:1,000 is recommended using mouse heart tissue extract.

By immunoblotting, a working antibody dilution of a 1:500-1:1,000 is recommended using extracts of the Jurkat cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

#### References

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KA/NV 10/05

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