

## New Product Highlights

### Monoclonal Antibody to NEDD8: A ubiquitin-like protein marker

Ubiquitin-like proteins (Ublps) are an expanding family of proteins that includes UCRP, sentrin1/SUMO1, sentrin2, sentrin3, Rub1 and NEDD8. NEDD8, a small protein (9 kDa) that shows the highest similarity to the ubiquitin protein (60% amino acid sequence identity and 80% homology), regulates cell division, signaling and embryogenesis [1-3]. NEDD8 mRNA is highly restricted to the heart and skeletal muscle in adult human tissues and is down regulated in mouse embryos [4,5].

Like ubiquitin, NEDD8 is conjugated to its target by sequential action of specific E1 and E2 like enzymes. For example, NEDD8 is conjugated to Cul-4A, which belongs to the cullin family of proteins, by the APP-BP1/hUba3 heterodimer and hUbc12 (as the E1- and E2-like enzymes, respectively) [6]. The only known target of NEDD8 is the cullin family, among them Cul-1, -2, -3, -4A, -4B and -5. Human Cul-1 belongs to the Skp1-Cullin-1/CDC53-F-box (SCF) complex that catalyzes the ubiquitination of I $\kappa$ B $\alpha$ ,  $\beta$ -catenin and p27, and is responsible for ubiquitylation of a multitude of protein that regulate various biologically important processes such as cell cycle progression and signal transduction.

Sigma-RBI is pleased to offer **Monoclonal Anti-NEDD8, Clone ND 23** (Prod. No. **N 2786**). The antibody was generated using a peptide corresponding to amino acids 20-32 of human NEDD8. Monoclonal Anti-NEDD8

recognizes human NEDD8 and does not cross-react with human SUMO1 or **human ubiquitin** (Prod. No. **U 5507**). Applications include ELISA, immunoblotting and immunocytochemistry.

#### References

1. Lammer, D., et al., *Genes Dev.*, **12**, 914-926 (1998).
2. Pozo, J.C., et al., *Science*, **280**, 1760-1763 (1998)
3. Kurz, T., et al., *Science*, **295**, 1294-1298 (2002).
4. Kumar, S., et al., *Biochem. Biophys. Res. Commun.*, **195**, 393-399 (1993).
5. Kamitani, T., et al., *J. Biol. Chem.*, **272**, 28557-28562 (1997).
6. Osaka, F., et al., *Genes Dev.*, **12**, 2263-2268 (1998).

#### Related Antibodies

[E 3152](#) **Monoclonal Anti-E1 (Ubiquitin Activating Enzyme), Clone 2G2.3** (mouse)

[U 0508](#) **Monoclonal Anti-Ubiquitin, Clone 6C1** (mouse)

[U 5379](#) **Anti-Ubiquitin** (rabbit)

#### Related Proteins

[N 8529](#) **NEDD8, human**

[N 2030](#) **NEDD8 precursor, human**

[S 0314](#) **SUMO-1/Sentrin-1, human**

[S 0439](#) **SUMO-1/Sentrin-1, human**

[U 6253](#) **Ubiquitin, bovine**

[U 5382](#) **Ubiquitin, Human**

[U 5507](#) **Ubiquitin, Human**

