

### Enzymatic Labels and Biotin

#### Peroxidase (HRP)

Peroxidase (Raifort Horseradish Peroxidase) is one of the most commonly used enzymes for labeling, as it is cheap and versatile. Our peroxidase is selected for its high activity and conjugated to the antibodies following an optimized process, which results in highly sensitive and stable antibodies. HRP reacts with an extensive range of soluble and insoluble substrates (please refer section Enzymes-substrates), standards being TMB for colorimetry in ELISA and blotting, and Uptight chemiluminescent substrate (BM4961) for higher sensitivity. One of the main problems associated to HRP is non-specific staining resulting from endogenous peroxidase activity in some immunocytochemistry applications.

#### Alkaline Phosphatase label (AP)

Alkaline Phosphatase (AP) is an enzyme, which is isolated from calf intestines. It gives a more linear activity than peroxidase, and is suitable for most immunodetections. AP is recommended for applications where high levels of endogenous peroxidase are present and for quantitative and sensitive measurements (AP reaction rate is more linear than HRP, the sensitivity can be increased by just allowing the reaction to proceed for longer periods of time).

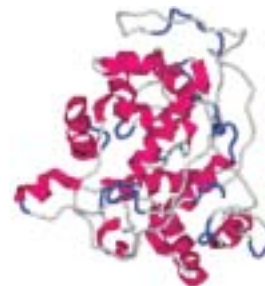
Recommended substrates for alkaline phosphatase are : BCIP/NBT for blotting and IHC applications (cat.# UP096051) and pNPP for ELISA (cat.# UP732500). The reaction with pNPP allows kinetic readings. Endogenous AP activity found in some samples can be inhibited by levamisole.

#### Biotin label

Biotin is a very popular and versatile label, used with streptavidin conjugates and other amplifying systems. It is also useful for purification purposes. Biotin has a very high affinity for avidin and related molecules (neutralized avidin, streptavidin  $K_a=10^{-14} \text{ mol}^{-1}$ ). This allows, combined to the fact that the biotinylation level of antibodies is optimized, to achieve very high sensitivity of detection, and efficient capture.



Dimer of alkaline Phosphatase



3D Structure of Horseradish Peroxidase

