

The Peroxidase of *Dioscorea esculenta*: Partial Purification and Characterisation

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We isolated two types of peroxidase from the fresh tuber of *Dioscorea esculenta* using a combination of ion exchange and gel filtration chromatography. The results showed one type to be neutral and the other to be strongly ionic. The strongly ionic type constitutes 70% of total peroxidase activity in the tissue. The apparent molecular weight of the neutral type is 38 kDa while the anionic type has an apparent molecular weight of 57 kDa. It was possible with the use of gel filtration on Sephadex G-200 followed by FPLC on phenyl superose to purify the lower size POD by a factor of 15, while the larger ionic peroxidase was purified 68 fold compared to the crude with protein yields of 0.90% and 1.30% respectively. The ionic POD is more thermo-stable, has a higher optimum temperature for activity and has a higher apparent activation energy compared to the neutral POD from this source.