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Physicochemical characterization of the starch from Ethiopian potato (*Plectranthus edulis*): a potential pharmaceutical excipient

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Starch from the tubers of Ethiopian potato (*Plectranthus edulis*) (Fam. *Lamiaceae*) has been isolated and examined for its chemical composition, amylose content and physicochemical properties. The yield of starch was about 80.4% on dry weight basis. The proximate composition of the starch on dry weight basis was found to be 0.14% ash, 0.21% lipid, 0.43% protein, and 99.22% starch. The amylose content was 30.6%. Its true density and moisture content values were 1.47 g/ml and 11.2%, respectively. Scanning electron microscopy (SEM) of the starch granules showed characteristic morphology that was by large oblong (elliptical) with some oval-shaped granules. The starch has normal granule size distribution with a mean particle size of 36.20 μm . The DSC thermograms of *P. edulis* starch obtained from starch-water mixtures (1:1), exhibited higher T_o (69.2°C), T_p (74.3°C) and T_c (83.3°C) values than those of potato starch. X-ray diffraction pattern of the starch was typical B-type with a distinctive maximum peak at 17.502 θ . The starch possesses higher swelling power and moisture sorption pattern, but lower solubility values than those of potato starch at all temperatures studied. Considering the high yield value and some similar physico-chemical properties to those of potato starch, *P. edulis* (Ethiopian potato) can be explored as an alternative source of starch for various applications.

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