

Enamel microstructure and dental histology in a heterodontosaurid dinosaur: *Heterodontosaurus tucki*

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Among non-avian dinosaurs, *Heterodontosaurus tucki* is unique for possessing complex dental features including both morphological and proportional heterodonty, sub-hypsodonty, tooth occlusion, and extensive low-angled wear facets—a collection of derived traits made additionally noteworthy by their appearance in one of the earliest-branching ornithischian lineages. In many taxa with similar dental characteristics, complex suites of modified dental tissues shape functional occlusal surfaces through wear. It remains unknown if *H. tucki* possesses similar histological complexity. Here, we investigate the histology and enamel microstructure of *H. tucki* maxillary cheek teeth from the Early Jurassic upper Elliot Formation of South Africa. Despite possessing a superficially complex dentition, the maxillary teeth exhibit a thin, relatively simple, three-layered enamel schmelzmuster (basal unit, columnar unit, and parallel crystallite) with enamel tubules. On the labial face, the enamel thins out drastically (