

## Elemental sulphur and alkali elutable melanin detected in oral melanosis and malignant melanoma by energy-filtering transmission electron microscopy

Type:

Article

Abstract:

**Background:** The morphology and contents of melanosomes are important features for differentiating melanocyte-derived melanotic lesions such as melanosis and malignant melanoma. **Methods:** In this study, we attempted to elucidate the structure of melanin and sulphur content in oral melanosis and malignant melanomas by ultrastructural analysis. **Results:** In oral melanosis, the essential pathological findings were overproduction of eumelanin and discharge of melanin into keratinocytes. In malignant melanoma in situ, pleomorphic and ellipsoid abnormal melanosomes with an increase in sulphur content and alkali elution rate were detected. In invasive malignant melanoma, the irregular ellipsoid and spheroid melanosomes existing either as discrete bodies or compound melanosomes with furtherly increased sulphur content and alkali elution were detected. **Conclusions:** Our findings suggest that abnormal melanosome morphology and high sulphur content are predictive markers for assessment of early or precancerous melanotic lesions and malignant melanoma.

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