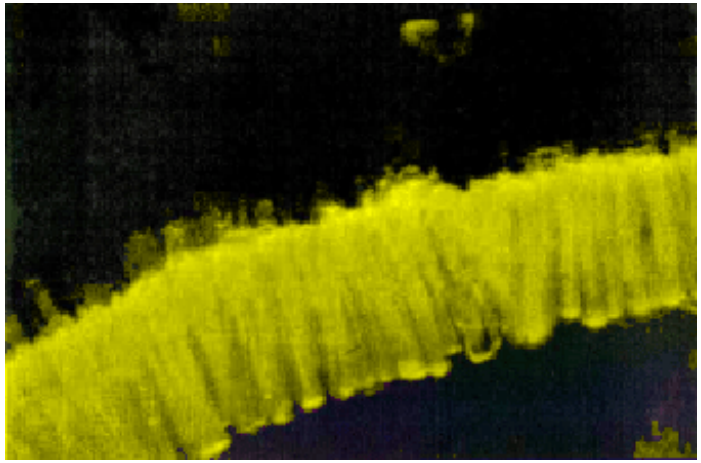
Ukrain (NSC 631570) autofluorescence in UV light



- Crystallized Ukrain

- In ultraviolet light Ukrain fluoresces in the yellowish green range of spectrum. Excitation frequencies are within a range of 220 to 490 nm. The spectral width of the fluorescence extends from 410 to 665 nm [4]*.

Thin-layer chromatography plate with drops of Ukrain under UV light. On the left, Ukrain in a concentration of 10 mg/ml in distilled water. Then serial dilutions by a factor of 10 each time (1 mg/ml; 0.1 mg/ml,...).

*This is the number of the scientific article. See Bibliography.

Ukrain (NSC 631570) autofluorescence in UV light

Patient in normal light.

Same patient under UV light at 254 nm.

Case:
N.E., female, aged 82. 1½ year history of multiple and exulcerating basaliomas in the temporo-bucco-nasal region.

Three minutes after first intramuscular injection of 5 ml Ukrain in the gluteal region. Strong fluorescence of the tumours and surrounding tissue. Ukrain administered after one week produced only slight fluorescence. A considerable regression of the tumours was also observed.

Ukrain (NSC 631570) autofluorescence in UV light

Patient in normal light.

Same patient under UV light at 254 nm.

Case:
T.B., female, aged 75.
Tonsillar carcinoma, already grown into the carotis externa; exulceration under treatment with Ukrain. Fluorescence of the tumour (right photo).

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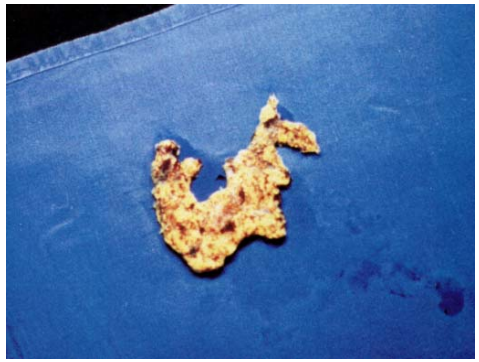
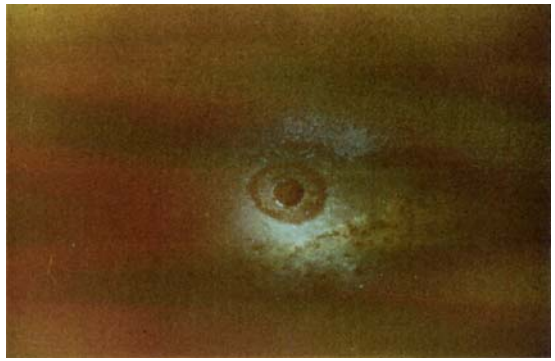
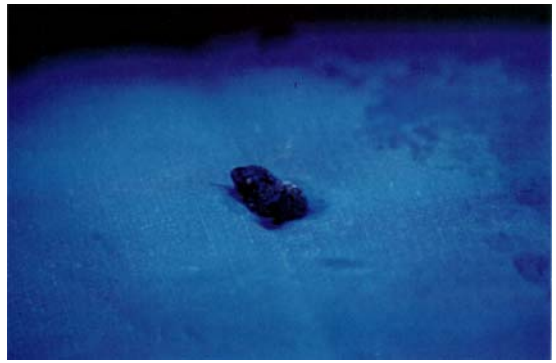


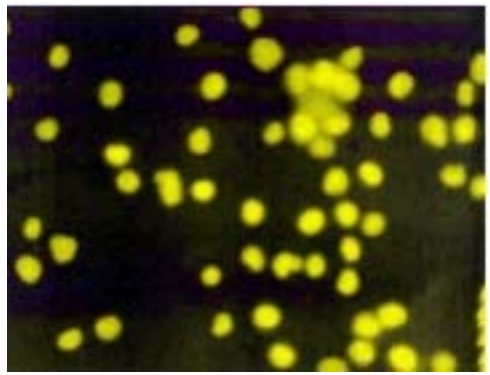
Yellow fluorescence of Ukrain in tumour tissue. Pathological sample (gastric adenocarcinoma) under UV light, 12 hours after 20 mg Ukrain i.v. injection.



Lymphatic nodes of the same patient show fluorescent points. Examination revealed malignant tissue at these locations, next to unaffected tissue.



Exulcerated mamma-ca in 58 year-old patient. After the first injection with Ukrain visible fluorescence in the tumour area.



Straight to the heart – Ukrain targets malignant tumour cell nuclei.

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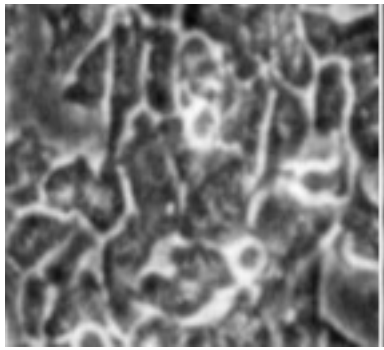
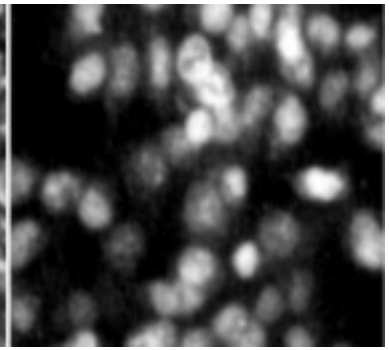
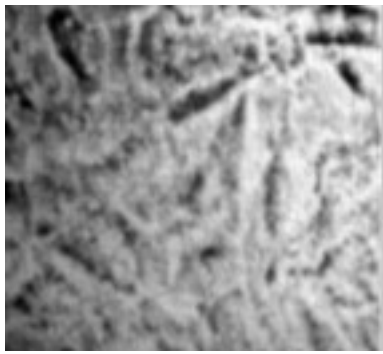
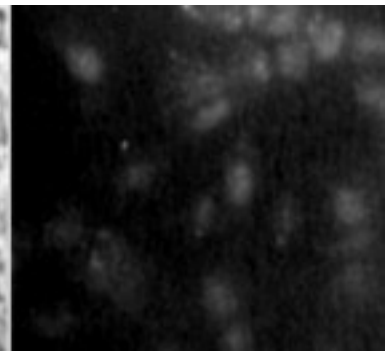
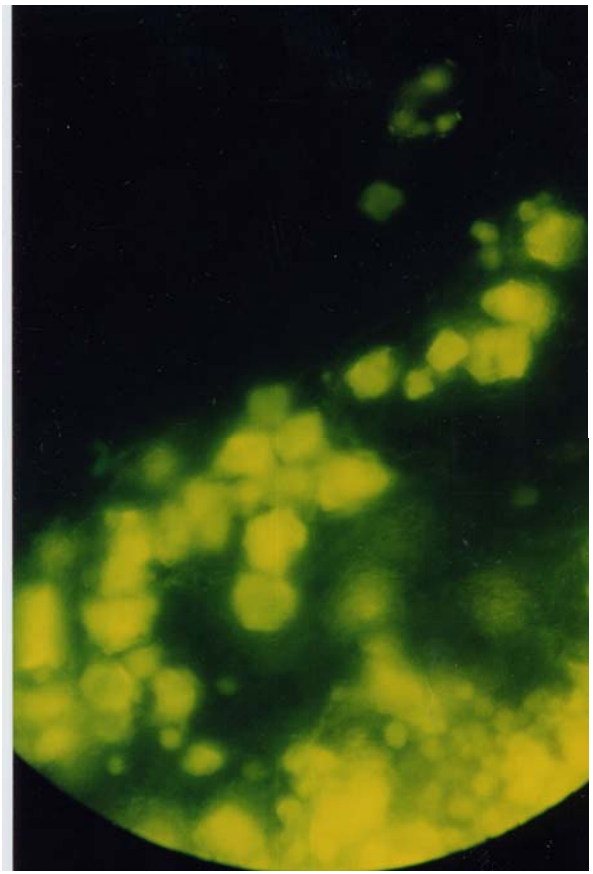
The uptake of Ukrain in melanoma cells compared to normal cells *(in vitro)*

	Phase Contrast	Fluorescence	
Melanoma Cells			**High uptake**
Endothelial Cells			**Low uptake**

Ref: [36] Hohenwarter O. et al. "Selective inhibition of *in vitro* cell growth by the anti-tumour drug Ukrain" Drugs under Experimental Research (1992) pp.1-4

Ukrain (NSC-631570) autofluorescence in UV-light



Pathological sample of pancreatic adenocarcinoma under UV-light

A 68 year old female patient was diagnosed as having inoperable pancreatic head carcinoma complicated with jaundice. Ukrain was administered intravenously at a single dose of 20 mg 4 hours before palliative surgery. During surgery, fine needle biopsy of the pancreas was performed. Auto-fluorescence of Ukrain under UV-light is seen in cancer cells only.

Ukrain (NSC-631570) in xeroderma pigmentosum

Patient S.S., an eight year old boy, was presented with an ulcering lesion of the nose. As he was 10 month old, xeroderma pigmentosum was diagnosed. (Patients with xeroderma pigmentosum have a severe sensitivity to all sources of ultraviolet radiation, especially sunlight and develop serious sunburns with onset of poikilodermia in the light-exposed skin. There is a wide range of symptoms: blindness and deafness, blistering or freckling on minimal sun exposure, developmental disabilities, dwarfism and hypergonadism, increased skin and eye cancers, and mental retardation. Squamous cell carcinomas, basal cell carcinomas and malignant melanomas already appear in childhood. The majority of patients die before reaching adulthood because of metastases of malignant melanoma). **Until the age of three years the number of skin lesions increased considerably. In May 2002 skin cancer (squamous cell carcinoma) at the nose was diagnosed, T4NXM0, histologically verified. From May till June 2002 three cycles of chemotherapy were administered (cyclophosphamide, vincristine, vinblastine). The therapy failed and the tumors grew up. Clinical investigation in April 2004 revealed deforming malignant melanoma of the nose with invasion into the cartilage of nasal septum, measuring 3x3 cm. On 20 May 2004 the therapy with Ukrain was started, 5 mg intravenously twice a week, up to a total dose of 85 mg. One month after the last administration of Ukrain a complete regression of the tumor was revealed. The skin defect was partially replaced with connective tissue. Xeroderma skin lesions improved throughout the body.**

Patient S.S. before the therapy with Ukrain. Deforming invasive malignant melanoma of the nose. April 2004.

Autofluorescence of NSC-631570 at the melanoma area under UV-light during the first intravenous injection. May 2004.

Patient S.S. in December 2004. Complete regression of the tumor, with connective tissue substitution.

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