

broth did not have absorption maxima around 357 nm corresponding to 2,6-dihydroxyquinoline<sup>18</sup>. The phenolic metabolite was purified by preparative TLC and crystallised from water to yield colourless needles, mp 159–161°C, UV.  $\lambda_{\max}$  at 290 (log  $\epsilon$  4.08) and 255 nm (log  $\epsilon$ , 3.82). The compound analysed for C<sub>9</sub>H<sub>6</sub>O<sub>3</sub> (analysis C, 66.4; H, 4.8%; nitrogen, absent). The mass spectrum had characteristic peaks at m/e 162 (M<sup>+</sup>, 43%), 134 (M-28, 33.69%), 105, 78. The NMR spectrum had proton signals at  $\tau$ 2.3 (1H, doublet,  $\zeta$ , 5 cps);  $\tau$ 3.7 (1H, doublet,  $\zeta$  = 5 cps), and  $\tau$ 3.0 (3H, multiplet). The infrared spectrum of the metabolite had bands at 3380, 1715, 1200 cm<sup>-1</sup>, and was superimposable with the IR spectrum of authentic 8-hydroxycoumarin (figure 2), thereby establishing the formation of 8-hydroxycoumarin during microbial transformation of quinoline in this bacterium. Both 2-hydroxyquinoline and 8-hydroxycoumarin were further metabolised and disappeared from the broth on continued incubation: These two metabolites were also oxidised readily by quinoline-adapted cells, further supporting their intermediary role. Formation of 8-hydroxycoumarin during quinoline catabolism in this bacterium indicates a preferential cleavage of pyridine, rather than the benzene ring of the quinoline molecule.

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## LATENT PERIOD FOR DYSPLASIA AND CARCINOMA OF CERVIX IN MICE DURING CHEMICAL CARCINOGENESIS

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THE influence of exogenous hormonal stress on prenatal, neonatal and adult stage for induction of cervical cancer in animals is well documented<sup>1-3</sup>. Since ovarian hormones play an important role in the development of cancer cervix<sup>4</sup>, the effects of these hormones need be well elucidated. An attempt has therefore been made to investigate the latent period for dysplasia and carcinoma of cervix in virgin female mice using two techniques of chemical carcinogenic stress.

This study is concerned with 460 virgin Swiss female mice of 6–8 weeks age. They were divided into two groups. In group I, the animals remained intact with ovary whereas, in group II, the animals were subjected to extirpation of ovary. Chemical induction of cervical tumour was carried out using local application of 20-methylcholanthrene dissolved in 1% acetone and thread impregnation method of Murphy<sup>5</sup> in a ratio of

**Table 1** Induction of cervical carcinoma by 20-methylcholanthrene in intact and oophorectomized mice following two different techniques

Status of Animals	Painting Method			Thread Impregnation Method		
	Latent period of dysplasia (mild)	Latent period of cervical carcinoma	Incidences of cervical carcinoma	Latent period of dysplasia (mild)	Latent period of cervical carcinoma	Incidences of cervical carcinoma
INTACT OVARY	** 6—8th day (110)*	** 8—10th week	68.77%	** 10—13th day (115)*	** 12—14th week	44.5%
OOPHORECTOMIZED	** 7—8th day (125)*	** 8—10th week	67.2%	** 10—15th day (110)*	** 12—14th week	43.6%

\* Numerical data in the parenthesis denotes the number of animals for the experimentation.

\*\* Indicates range.

1:3 (20-methylcholanthrene:beeswax) both in group I and group II mice. However, carcinogen was applied in oophorectomized mice on the 15th day following oophorectomy. Controls were simultaneously kept for comparison. The latent period for dysplasia (mild) and carcinoma of cervix were determined as reported by Kehar and Wahi<sup>6</sup> by serial examination of cervico-vaginal exfoliated cells using PAP stain. This study was further confirmed by histological studies (table 1).

It is evident from the table that the latent period for dysplasia and carcinoma of cervix are the same both in intact and oophorectomized mice in each technique although there are differences in latent period between the techniques applied. Such differences might be attributed to differences in the amount of carcinogen released for interaction with target cells.

Disturbances in hormonal balance has been reported to influence malignant growth in endocrine or in their dependent target organs<sup>7</sup>. In the present study, the extirpation of the ovary did not influence the latent period for dysplasia and carcinoma of cervix as well as incidence of cervical carcinoma. Mueenuddin and Zaman<sup>8</sup> have also shown that chemical carcinogenesis following oophorectomy does not influence the total incidences of carcinoma of cervix *in situ* and its invasive properties supporting the present observation.

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## DISCOVERY OF DINOSAURIAN HORN-CORE FROM THE INFRA-TRAPPEAN ROCKS OF KHEDA DISTRICT, GUJARAT

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THE presence of Dinosaurian horn-core has been recorded from the infra-trappean rocks, near a locality about 1 km NNW of Guthli, Kheda district, Gujarat. This is in addition to the Dinosaurian fossil locality discovered<sup>1</sup> about a km west of Rahioli, and the discovery of dinosaurian eggs in Kheda district<sup>7</sup> which have yielded well-preserved Dinosaurian fossil-bones as well as autochthonous dinosaurian eggs.

The present area was considered unfossiliferous