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C *Brues*
- in support of a pending application

**RADIOACTIVE Au¹⁹⁸ IN GOLD SEEDS FOR
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Au¹⁹⁸, half-life 2.70 days, was generated in pure gold wire, 0.007 inches in diameter, in the pile at Oak Ridge. The radioactive wire was slid into gold tubing, 0.015 inches inside by 0.032 inches outside in diameter, placed within a protective lead shield. Blunt pliers were used to pinch off uniform seeds, adjusted in length to obtain constant source strengths at various times. The tubing absorbed all the undesirable beta particles (0.970 Mev max.) except for an insignificant leakage at the thinned parts at the ends. Almost 90 per cent of the 0.411 Mev gamma rays passed through the walls of the seeds.

The seeds were implanted into, or adjacent to, C3HBA adenocarcinoma, 15091a spindle-cell mammary carcinoma, Sarcoma 37, and a localized lymphosarcoma, which had been transplanted into C3H, ABC, CFW, and A mice, respectively. Calipers were used to follow the regressions in the sizes of the tumors during the irradiations. Any residual tissue at the tumor site following the radiation exposure was examined histologically, and bits of it were transplanted into new mice to determine viability.

The cancerocidal doses were found to be:

Lymphosarcoma,	800 ± 200 r
Sarcoma 37,	2600 ± 500 r
C3HBA adenocarcinoma,	3600 ± 700 r
15091a carcinoma,	4200 ± 800 r

The sources of radioactive gold wire in the non-radioactive gold tubing beta-absorber may be made any length, and, because they are easily bent, they are very useful for making gamma-ray plaques. They may be incorporated in flexible plastic tubing to make radioactive sutures and may be inserted in stainless tubing to make rigid needles.

Because the 0.411 Mev gamma rays from Au¹⁹⁸ have a half-thickness in soft tissues only about 60 per cent as great as in the case of those from Co⁶⁰ and, since they are also much more readily absorbed than most of the gamma rays emitted by radium, it is felt that Au¹⁹⁸ may prove to be an advantageous successor to radon for permanent seed implantations, as well as to Co⁶⁰ and to radium for removable sources in interstitial therapy.

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