sine in the perfusate was the source of the norepinephrine with but little dilution by tyrosine in the bulk of heart. Of course, only a fraction of the heart tissue represents sympathetic nervous tissue.

The estimated rates of formation, shown in Table 1, are probably too low for two reasons. First, norepinephrine was continuously released from the heart and appreciable amounts of acidic metabolites of norepinephrine were detected in the perfusate. Second, the tyrosine concentrations in the perfusate ranged from 0.15 to 0.33 μg/ml as compared to a normal plasma level of about 10 to 15 μg/ml. It is quite possible that the rate could have increased with larger concentrations of precursor. Estimates on the rate of synthesis of norepinephrine in intact mammalian heart have ranged from 0.03 to 0.2 μg/g per hour (*7*). It is apparent therefore that the rate of synthesis by the isolated perfused guinea pig heart is at least comparable to that reported in the intact animal.

Thus, the isolated heart contains all the catalysts required for converting tyrosine to norepinephrine:

tyrosine ⟶ dopa ⟶
dopamine ⟶ norepinephrine

Furthermore, norepinephrine synthesis could take place in each sympathetically innervated organ including heart, spleen, brain and blood vessels. These results reaffirm the widely held concept that norepinephrine, in contrast to epinephrine, is a local hormone.

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Indium Antimonide: the Metallic Form at Atmospheric Pressure

Abstract. *The crystal structure of metallic indium antimonide at atmospheric pressure and −197°C is essentially identical with that of white tin at 26°C.*

Compression of group IV elements and of group III–V and group II–IV binary compounds transforms them into metals (*1–3*). The phase change is marked by a large increase in density and a rise in the number of equivalent near neighbors from four, which is characteristic of these materials at low pressure, to six, which is characteristic of the new phase (*4*). The work of Drickamer and his co-workers (*3*) and of Kennedy and his co-workers (*1*) has clearly demonstrated the generality of the phenomenon.

Jamieson has examined the crystal structure of the metallic form of indium antimonide under high pressure and found it to be analogous to that of white tin. We now report a low-pressure study that shows the structure to be essentially identical with that of ordinary metallic tin.

The metallic form of InSb may be obtained at low pressures by cooling the material while it is under pressure and then reducing the pressure. The metallic form was first made as described previously (*1–3*) by application of pressures a few kilobars in excess of the transition pressure of 23 kb at a temperature of about 95°C. Periods of several hours were used to insure complete conversion.

Liquid nitrogen was then used to cool the entire assembly of press and sample. When the temperature of the sample had dropped to well below 210°K (−63°C) the pressure was released, and the sample was removed from the cylinder, which contained tungsten carbide. We found that the material was a very good metal with a very low resistance, comparable to that of aluminum at temperatures between 77° and 210°K. It was very shiny and metallic and extremely hard, somewhat like tool steel. It was found, empirically, to be stable for weeks, so long as it was kept at temperatures below −63°C, and it was even possible to machine it.

An x-ray diagram was taken by the Debye-Scherrer technique at 77°K. The spectrum with CuK α radiation is given in Table 1, together with the lattice spacings of ordinary white tin (*5*).

Table 1. Lattice spacings of white (or β tin) and metallic indium antimonide, InSb(II). The unit-cell dimensions for Sn(β) at 26°C and InSb (II) at −197°C are, respectively, *a*, 5.831 and 5.72 ± 0.16Å; *c*, 3.182 and 3.18 ± 0.03Å. The corresponding densities are, respectively, 7.286 and 7.54 ± 0.16 g/cm³.

hkl	Sn(β), d(Å), Cu. 1.5405 Å	InSb(II), d(Å), Cu. 1.5405 Å
200	2.915	2.90
101	2.793	2.78
220	2.062	2.05
211	2.017	2.02
301	1.659	1.65
112	1.484	1.48
400	1.458	
		1.44*
321	1.442	

* Unresolved.

It is clear from these data that the two structures are identical to within 0.02 Å in the spacings for the body-centered tetragonal lattice (*6*).

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Indium Antimonide: Superconductivity of the Metallic Form

Abstract. *The transition of metallic indium antimonide into the superconducting state begins at 2.1°K and is complete at about 1.6°K. These data are close to those for white tin.*

Superconductivity in metallic InSb, prepared and stabilized at atmospheric pressure in the way described by Darnell and Libby (*1*), has been observed.

Samples about 1 inch long and about