An alternative, more straightforward and effective method for the preparation of 1-(diphenylphosphino)-1’-(N,N-dimethylaminomethyl)ferrocene was developed using 1-bromo-1’-(diphenylphosphino)ferrocene as the starting material and Eschenmoser’s salt as an aminomethylation agent. Purity of thus prepared phosphinoamine was verified by $^1$H and $^{31}$P NMR spectroscopy and by comparison of the data with those reported in the literature (M. E. Wright, Organometallics, 1990, 9, 853). The coordination chemistry of this compound was investigated in gold(I) complexes. Thus, chlorido[1-(diphenylphosphino)-1’-(N,N-dimethylaminomethyl)ferrocene]gold(I) complex was synthesized and converted to ill-defined [1-(diphenylphosphino)-1’-(N,N-dimethylaminomethyl)ferrocene]gold(I) perchlorate by halogen abstraction with AgClO$_4$. Protonization of the nitrogen atom in both compounds with hydrogen chloride yielded the corresponding hydrochlorides. It was shown that 1-(diphenylphosphino)-1’-(N,N-dimethylaminomethyl)ferrocene is coordinated as a simple phosphine in the resulting complexes while its amine nitrogen is protonated. All these complexes were characterized by means of $^1$H, $^{31}$P and $^{13}$C NMR spectroscopy, mass spectroscopy with electrospray ionisation, elemental analysis and by single-crystal X-ray diffraction analysis.