10. Ito Y, Muranaka A, Harada T, Matsudo A, Yokobayashi T, Terashima H. Experimental study on tumor affinity of Tl-201-chloride. *Eur J Nucl Med* 1978;3:81–86.

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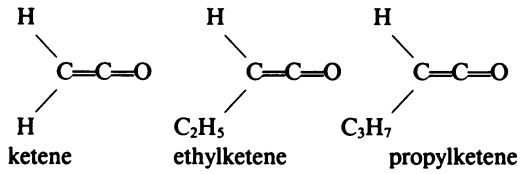
Incorrect Naming of a Carbon-11-Labeled Reagent

TO THE EDITOR: I would like to point out a trivial, but perhaps important, error in the paper entitled "No-Carrier-Added Carbon-11-Labeled sn-1,2- and sn-1,3- Diacylglycerols by [^{11}C] Propyl Ketene Method" published in the *Journal* (*J Nucl Med* 1991;32:1622–1626). The error is in the naming of the reagent in the title and throughout the text. The authors have called the ketene formed propyl ketene, but it is in fact ethylketene. The structure that they depict in Figure 1 is correct, but the name is incorrect. Structures of ketenes are as follows, and can be obtained from general organic textbooks.



I pointed out the fact that the nomenclature for this compound was incorrect when it was presented at the 8th International Symposium on Radiopharmaceutical Chemistry (*J Lab Compds Radiopharm* 1991;30:127–128), but apparently the authors did not understand. I am concerned that a trivial error like this will be propagated further in the literature unless a correction is made in your journal.

If you have questions about my concerns on nomenclature, please ask one of the chemists on your Editorial Board to review this issue. Thank you for your efforts.

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REPLY: We thank Dr. Wilbur for communicating with us concerning the naming problem of alkylketene compounds (*1*). $C_2H_5CH=^{11}C=O$ should be named ^{11}C-labeled ethylketene. However, the inappropriate naming in the article does not affect our conclusions concerning the ability of the new labeling method using ketene reaction. Our experiments have shown that several ^{11}C-labeled alkylketenes can be formed in the same condition as described in the article. For example, $^{11}CO_2$ reacted to the alkyl lithium mixture which consisted of the same equivalent of *n*-propyl lithium (2.2 μmol) and *n*-butyl lithium (2.2 μmol). Carbon-11-labeled ethylketene and propylketene were formed from *n*-butyric acid and *n*-valeric acid by the pyrolytic decomposition, respectively, as follows:

$$C_3H_7Br + 2\,Li \rightarrow C_3H_7Li + LiBr$$
n-propyl bromide — *n*-propyl lithium

$$^{11}CO_2 + C_3H_7Li \rightarrow C_3H_7{}^{11}COOH \xrightarrow{HCl} C_2H_5CH=^{11}C=O$$
[1-^{11}C]butyric acid, 530°C, [^{11}C]ethylketene

$$C_4H_9Br + 2\,Li \rightarrow C_4H_9Li + LiBr$$
n-butyl bromide — *n*-butyl lithium

$$^{11}CO_2 + C_4H_9Li \rightarrow C_4H_9{}^{11}COOH \xrightarrow{HCl} C_3H_7CH=^{11}C=O$$
[1-^{11}C]valeric acid, 530°C, [^{11}C]propylketene

Generally, ketene is an extremely unstable compound so that we could not detect any ketenes as naturally active molecules (*2*). However, we easily obtained the acylated compound as [^{11}C] alkylketene adduct (*3*). These ^{11}C-labeled alkylketenes produced the simultaneous formation of *rac*-1,2,-[^{11}C]diacylglycerols, 1-[1-^{11}C]butyryl-2-palmitoyl-*rac*-glycerol and 1-[1-^{11}C]valeryl-2-palmitoyl-*rac*-glycerol as shown in Figure 1. This suggests the equality of producing [^{11}C]alkylketene formation in smaller degrees of alkyl carbon chains.

We believe that the ketene reaction could be more general and not be necessarily limited to [^{11}C]propylketene or [^{11}C]ethylketene because another alkylketene, which has smaller alkyl carbon chains, can also be produced by the same procedures. We believe this is a good opportunity to define the "Ketene Method" as an all inclusive term.

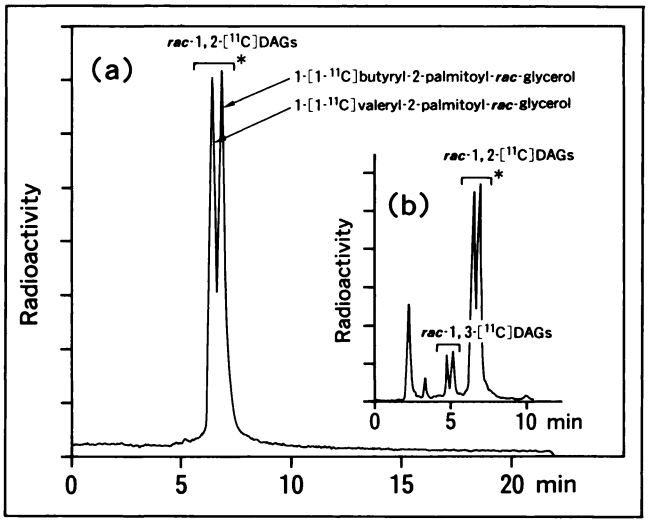

FIGURE 1. Radio-HPLC profile of *rac*-1,2-[^{11}C]diacylglycerols (a) separated from [^{11}C]alkylketene adducts (b). [^{11}C]alkylketenes, [^{11}C]ethylketene and [^{11}C]propylketene formed from n-[1-^{11}C]butyric acid and *n*-[1-^{11}C]valeric acid, respectively, react to 2-palmitoylglycerol. Zorbax SIL (DuPont Instrument, 4.6 mm × 25 cm) was used for the analysis of [^{11}C]alkylketene adducts. HPLC was performed at room temperature, and *rac*-1,2-diacylglycerols (*rac*-1,2-DAGs) were separated by using hexane-isopropyl alcohol (194:6 v/v). The flow rate was 1.8 ml/min. (a) The simultaneous formation of *rac*-1,2-[^{11}C]DAGs, 1-[1-^{11}C]butyryl-2-palmitoyl-*rac*-glycerol (6.8 min) and 1-[1-^{11}C]valeryl-2-palmitoyl-*rac*-glycerol (6.4 min). Time means the retention time on HPLC analysis. (b) [^{11}C]alkylketene adducts and inpurities before the HPLC separation.