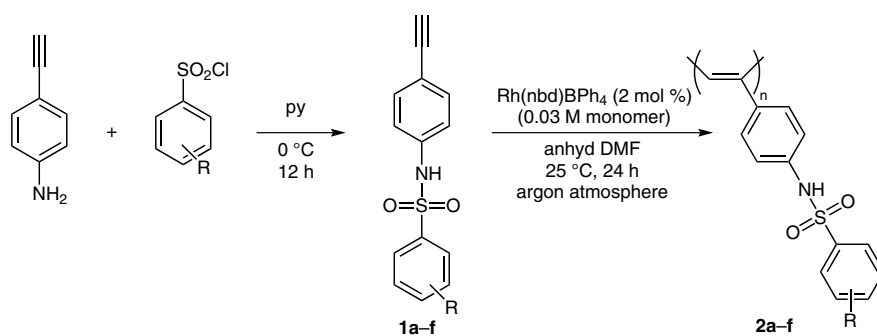


R. SAKAI, E. B. BARASA, N. SAKAI, S.-I. SATO, T. SATOH, T. KAKUCHI\* (HOKKAIDO UNIVERSITY, SAPPORO, JAPAN)  
 Colorimetric Detection of Anions in Aqueous Solution Using Poly(phenylacetylene) with Sulfonamide Receptors Activated by Electron-Withdrawing Group  
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## Poly(phenylacetylene)s with Pendant Sulfonamide Receptors for Anion Detection



	R	Yield		R	Yield	Mn × 10 <sup>-5</sup>	PDI
<b>1a</b>	H	90%	<b>2a</b>	H	86%	0.9	1.97
<b>1b</b>	4-O <sub>2</sub> N	87%	<b>2b</b>	4-O <sub>2</sub> N	68%	4.77	5.65
<b>1c</b>	3,5-(CF <sub>3</sub> ) <sub>2</sub>	92%	<b>2c</b>	3,5-(CF <sub>3</sub> ) <sub>2</sub>	84%	2.44	3.54
<b>1d</b>	4-Me	95%	<b>2d</b>	4-Me	85%	2.91	2.57
<b>1e</b>	4- <i>t</i> -Bu	88%	<b>2e</b>	4- <i>t</i> -Bu	81%	1.2	3.33
<b>1f</b>	4-OMe	72%	<b>2f</b>	4-OMe	82%	1.64	4.99

**Significance:** Development of colorimetric sensors capable of detecting anions in aqueous medium is of great interest. In this paper, the authors describe the synthesis of a series of poly(phenylacetylene)s bearing pendant sulfonamide side chains. The sulfonamide moiety is demonstrated to act as an anion receptor via a deprotonation mechanism, allowing sensing of anions in aqueous environment.

**Comment:** In this paper, the authors report a two-step protocol leading to a series of poly(phenylacetylene)s containing pendant sulfonamide moieties with electron-withdrawing or electron-donating substituents (**2a–f**). The obtained polymers showed varied PDIs (see Table above) in agreement with known rhodium-catalyzed polymerizations of acetylenes. They furthermore demonstrate the utility of these polymers as anion sensors. **2b** showed clear red-shifted absorption upon addition of fluoride in mixed solvents with 20% water content.

**SYNFACTS Contributors:** Timothy M. Swager, Jens B. Ravensbæk  
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