Supporting Information:

Direct Visualization of Near-Field Distributions on a Two-Dimensional Plasmonic Chip by Scanning Near-Field Optical Microscopy

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S1. Near-field transmission image and electric field distribution simulated at nearinfrared region



Figure S1 (a) Unpolarized near-field transmission image observed near 770 nm. Black dotted circles represent the approximate shapes of the nanoholes. Scale bars: 400 nm. (b) Electric field amplitude distribution on the two-dimensional plasmonic chip simulated at 770 nm.

S2. Transmission spectrum simulated by Rigorous Coupled Wave Analysis



Figure S2 (a) Transmission and (b) reflection spectra simulated by Rigorous Coupled Wave Analysis (RCWA) on the two-dimensional plasmonic chip. In these spectra, the first-order diffraction mode in the diagonal direction (m=1, $\Lambda=679$ nm) was not excited.

S3 Near-field extinction spectrum of the two-dimensional plasmonic chip.



Figure S3 (a) Scanning electron micrograph of the two-dimensional plasmonic chip. Scale bar: 400 nm. (b) Near-field extinction spectrum measured at the blue point in (a). The shoulder indicated by a red arrow reflect the first-order diffraction mode in the diagonal direction (m=1, $\Lambda=679$ nm) on the top surface.