WHAT IS CLAIMED IS:

1. A method for determining the presence of an immune cell clonotype at a location in a biological sample, the method comprising:

(a) contacting the biological sample with an array comprising a plurality of capture probes, wherein a capture probe of the plurality of capture probes comprises (i) a spatial barcode and (ii) a capture domain that hybridizes to a nucleic acid encoding an immune cell receptor of the immune cell clonotype;

(b) extending the capture probe using the nucleic acid encoding the immune cell receptor as a template to generate an extended capture probe;

(c) hybridizing one or more probes to the extended capture probe, or a complement thereof, in a portion encoding a constant region of the immune cell receptor of the immune cell clonotype,

(d) enriching the extended capture probe or the complement thereof; and

(e) determining (i) the sequence of the spatial barcode or a complement thereof, and (ii) all or a portion of the sequence of the nucleic acid encoding the immune cell receptor of the immune cell clonotype or a complement thereof, and using the determined sequences of (i) and (ii) to determine the presence of the immune cell clonotype at a location in the biological sample.

2. The method of claim 1, wherein the capture probe further comprises a cleavage domain, one or more functional domains, a unique molecular identifier, and combinations thereof.

3. The method of claim 1, wherein the capture domain comprises a poly(T) sequence.

4. The method of claim 1, wherein the one or more probes comprises a binding moiety capable of binding a capture moiety.

5. The method of claim 4, wherein the enriching step is performed via an interaction between the binding moiety in the one or more probes and the capture moiety.

6. The method of any one of claims 1-5, wherein the immune cell clonotype is a T cell clonotype, the immune cell receptor of the immune cell clonotype comprises a T cell receptor

alpha chain, and the one or more probes hybridizes to a nucleic acid sequence encoding a constant region of the T cell receptor alpha chain, or a complement thereof.

7. The method of claim 6, wherein step (e) comprises determining a sequence encoding one or more of CDR1, CDR2, and CDR3 of the T cell receptor alpha chain and, optionally, determining a sequence encoding a full-length variable domain of the T cell receptor alpha chain.

8. The method of any one of claims 1-5, wherein the immune cell clonotype is a T cell clonotype, the immune cell receptor of the immune cell clonotype comprises a T cell receptor beta chain, and the one or more probes hybridizes to a nucleic acid sequence encoding a constant region of the T cell receptor beta chain, or a complement thereof.

9. The method of claim 8, wherein step (e) comprises determining a sequence encoding one or more of CDR1, CDR2, and CDR3 of the T cell receptor beta chain, and optionally, determining a sequence encoding a full-length variable domain of the T cell receptor beta chain.

10. The method of any one of claims 1-5, wherein the immune cell clonotype is a B cell clonotype, the immune cell receptor of the immune cell clonotype comprises an immunoglobulin kappa light chain, and the one or more probes hybridizes to a nucleic acid sequence encoding a constant region of the immunoglobulin kappa light chain, or a complement thereof.

11. The method of claim 10, wherein step (e) comprises determining a sequence encoding one or more of CDR1, CDR2, and CDR3 of the immunoglobulin kappa light chain, and optionally, determining a sequence encoding a full-length variable domain of the immunoglobulin kappa light chain.

12. The method of any one of claims 1-5, wherein the immune cell clonotype is a B cell clonotype, the immune cell receptor of the immune cell clonotype comprises an immunoglobulin lambda light chain, and the one or more probes hybridizes to a nucleic acid sequence encoding a constant region of the immunoglobulin lambda light chain, or a complement thereof.

13. The method of claim 12, wherein step (e) comprises determining a sequence encoding one or more of CDR1, CDR2, and CDR3 of the immunoglobulin lambda light chain, and optionally, determining a sequence encoding full-length variable domain of the immunoglobulin lambda light chain.

14. The method of any one of claims 1-5, wherein the immune cell clonotype is a B cell clonotype, the immune cell receptor of the immune cell clonotype comprises an immunoglobulin heavy chain, and the one or more probes hybridizes to a nucleic acid sequence encoding a constant region of the immunoglobulin heavy chain, or a complement thereof.

15. The method of claim 14, wherein step (e) comprises determining a sequence encoding one or more of CDR1, CDR2, and CDR3 of the immunoglobulin heavy chain, and optionally, determining a sequence encoding a full-length variable domain of the immunoglobulin heavy chain.

16. The method of claim 4, wherein the binding moiety comprises biotin and the capture moiety comprises streptavidin.

17. The method of any one of claims 1-5, further comprising generating the complement of the extended capture probe using the extended capture probe as a template, wherein the complement of the extended capture probe comprises (i) a sequence that is complementary to the spatial barcode, and (ii) a sequence that corresponds to all or a portion of the sequence of the nucleic acid encoding the immune cell receptor of the immune cell clonotype.

18. The method of any one of claim 1-5, wherein the biological sample comprises a tissue sample, optionally wherein the tissue sample is a tissue section, optionally, wherein the tissue section is a fresh-frozen tissue section.

19. The method of any one of claims 1-5, wherein the nucleic acid encoding the immune cell receptor of the immune cell clonotype comprises DNA or mRNA.

20. The method of any one of claims 1-5, wherein the method further comprises imaging the biological sample.

21. The method of any one of claims 1-5, wherein step (e) comprises sequencing the extended capture probe or the complement thereof to determine (i) the sequence of the spatial barcode, or the complement thereof, and (ii) all or a portion of the sequence of the nucleic acid encoding the immune cell receptor of the immune cell clonotype or the complement thereof.

22. The method of claim 21, wherein the sequencing comprises long read sequencing.

23. The method of any one of claims 1-5, wherein the method further comprises after step (d), performing an enrichment polymerase chain reaction using i) a first primer complementary to an adaptor domain of the capture probe, and ii) a second primer complementary to a portion of a nucleic acid sequence encoding a variable region of the immune cell receptor of the immune cell clonotype.

24. The method of claim 23, wherein the second primer is complementary to a nucleic acid sequence 5' to the sequence encoding CDR3 of the immune cell receptor of the immune cell clonotype.

25. The method of claim 23, wherein the immune cell clonotype is a T cell clonotype, and the immune cell receptor is a T cell receptor.

26. The method of any one of claims 1-5, wherein the method comprises determining the presence of two or more immune cell clonotypes at a location in the biological sample, and optionally, wherein the method further comprises comparing the two or more immune cell clonotypes.

27. The method of claim 17, wherein the step of generating the complement of the extended capture probe comprises use of a template switch oligonucleotide.

28. The method of any one of claims 1-5, wherein the extending in step (b) generates an extended capture probe comprising a sequence encoding a CDR3, or a complement thereof, of the immune cell receptor of the immune cell clonotype.