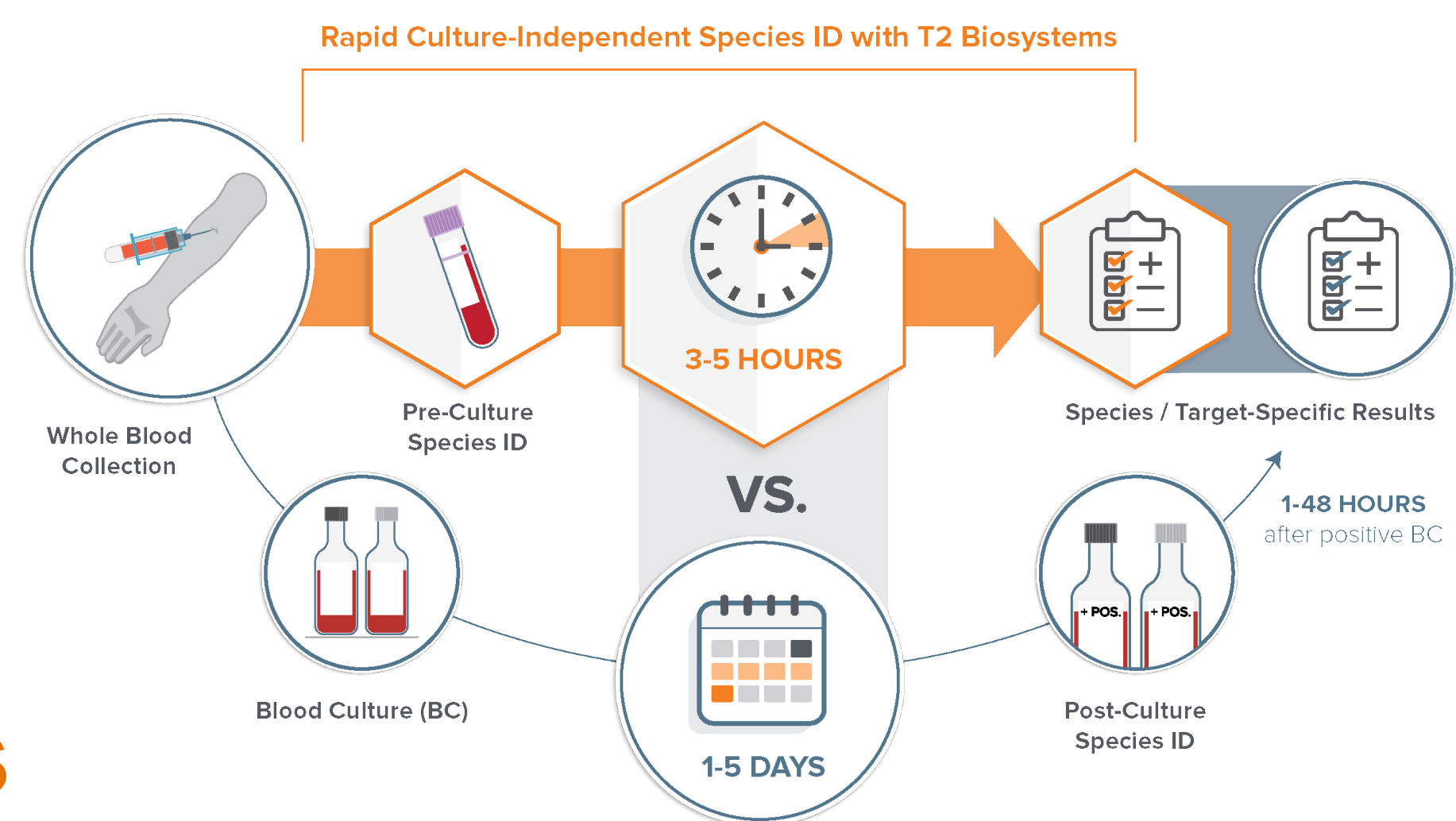


# The T2Candida Panel Identifies 3.55 Times More On-Panel *Candida* Species Compared to Conventional Blood Culture

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## Background

- The T2Candida<sup>®</sup> Panel is an FDA-cleared and CE-marked culture-independent *in vitro* diagnostic test that identifies common species that cause fungal sepsis utilizing T2 Magnetic Resonance Technology (T2MR).
- This FDA-cleared panel detects *Candida albicans*, *Candida tropicalis*, *Candida parapsilosis*, *Candida krusei*, and *Candida glabrata* directly from whole blood within 3-5 hours.
- The T2Candida Panel has been demonstrated to be highly sensitive with a sensitivity of 91.1% and a limit of detection (LoD) of 1-3 CFU/mL.<sup>1</sup>
- The T2Dx Instrument detects intact pathogen cells<sup>2</sup> → both active and non-proliferating/stationary cells
- The purpose of this study is to quantify the rate at which T2Candida detects on-panel species compared to blood culture in studies evaluating T2Candida.



## Methods

### INCLUSION:

Publications, presentations, and abstracts evaluating the T2Candida Panel were systematically screened and included if the study reported organism level detection data for both the T2Candida panel and conventional blood cultures.

### EXCLUSION:

Studies were excluded if organism level data were not available for both on and off-panel organisms. Data relating to bacterial species and the T2Bacteria Panel were excluded from analyses.

### OUTCOMES:

The primary outcome is the ratio of on-panel organisms identified overall by the T2Candida Panel compared to conventional blood cultures.

## Results

**Table 1: Included Studies**

Author	Year	Location	T2C Tested	Patient Population
Mylonakis, E <sup>1</sup>	2015	USA	1501	Blood Culture Ordered
Cendejas-Bueno, E <sup>3</sup>	2021	Spain	97	Medical-surgical PICU
Cruz, H <sup>4</sup>	2023	Portugal	34	ICU
Lucignano, B <sup>5</sup>	2022	Italy	106	Pediatric Sepsis
Seitz, T <sup>6</sup>	2022	Austria	85	ICU
Birk, N <sup>7</sup>	2023	USA	870	ICU
Zacharioudakis, IM <sup>8</sup>	2023	USA	216	ICU
Krifors, A <sup>9</sup>	2022	Sweden	101	Surgical ICU
O'Donnell, M <sup>10</sup>	2023	USA	155	Medical ICU

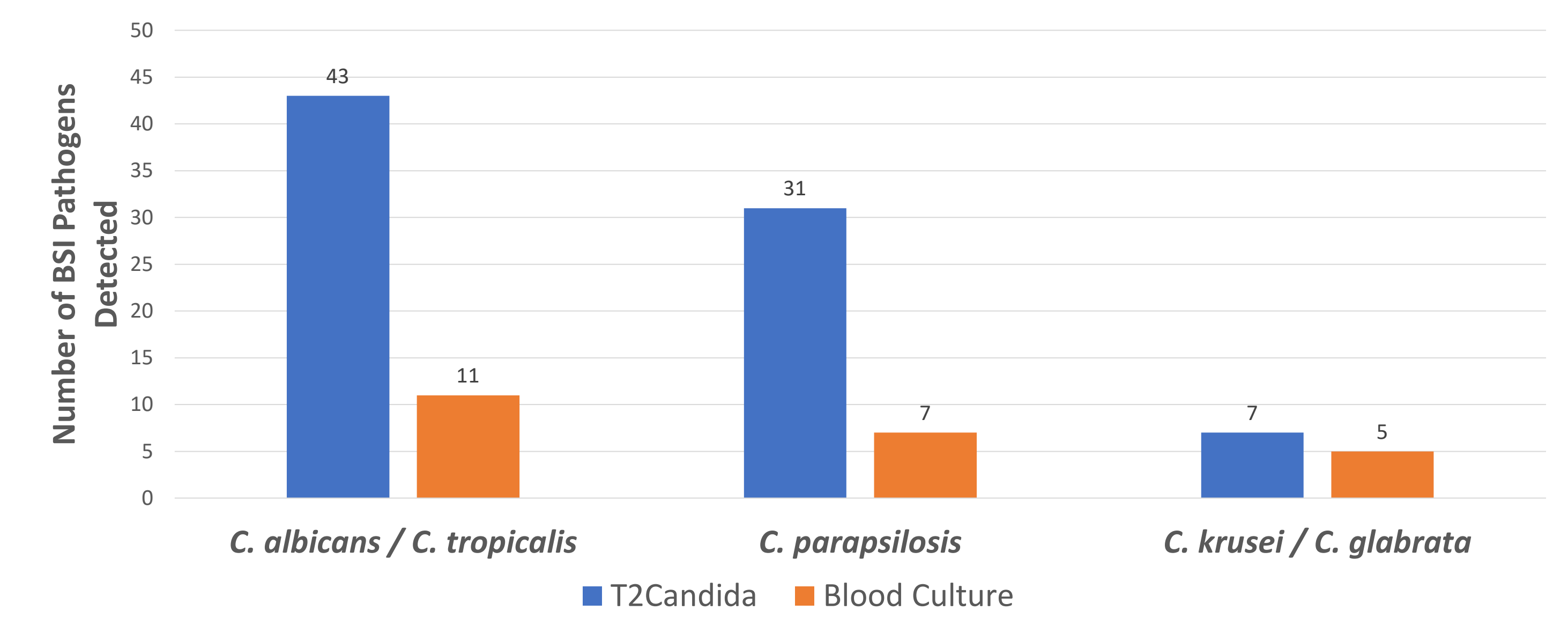
**Table 2: Time to Pathogen Detection and Ratio of T2Candida Panel vs Blood Culture Pathogen Detection**

Author	T2C Positive	Time to Species ID T2C (h)	BC Positive	Time to Species ID BC (h)	Δ (h)	T2C+/BC+ Ratio
Mylonakis, E <sup>1*</sup>	36	4.2	7	> 120	115.8	5.1
Cendejas-Bueno, E <sup>3</sup>	7	NA	2	NA	NA	3.5
Cruz, H <sup>4</sup>	5	5.7	2	70.3	64.6	2.5
Lucignano, B <sup>5</sup>	10	3.7	4	125.5	121.8	2.5
Seitz, T <sup>6</sup>	9	5	1	85.6	80.6	9
Birk, N <sup>7</sup>	79	NA	22	NA	NA	3.6
Zacharioudakis, IM <sup>8</sup>	5	NA	3	NA	NA	1.7
Krifors, A <sup>9</sup>	9	NA	2	NA	NA	4.5
O'Donnell, M <sup>10</sup>	14	5.6	7	60	54.4	2
<b>Total</b>	<b>174</b>		<b>50</b>			<b>3.5</b>
<b>Time (mean)</b>		<b>4.8 h</b>		<b>92.3</b>		<b>87.5</b>

\* Prospectively collected samples ONLY

## Results

**Figure 1: Additional BSI Causing Pathogen Detection with the T2Candida Panel (1,3-6,10)**



**Table 3: Ratio of Additional Pathogens Detection with the T2Candida Panel Compared to Conventional Blood Culture (1,3-6,10)**

Species	No. BSIs Pathogens Identified	T2C+/BC+ Ratio
<i>C. albicans</i> / <i>C. tropicalis</i>	43	3.9
<i>C. parapsilosis</i>	31	4.4
<i>C. krusei</i> / <i>C. glabrata</i>	7	1.4
<b>Total</b>	<b>81</b>	<b>3.5</b>

**Table 4: Clinical Adjudication of T2Candida Positive – Blood Culture Negative Cases<sup>(3,5,6,10)</sup>**

Author	No. of T2C+/BC- cases	Adjudication*
Cendejas-Bueno, E <sup>3</sup>	5	5/5 = Pathogen identified in other cultures
Lucignano, B <sup>5</sup>	6	6/6 = Probable or Possible IC
Seitz, T <sup>6</sup>	8	8/8 = True infections
O'Donnell, M <sup>10</sup>	7	2/7 = Probable or Possible IC <sup>±</sup>

\* Adjudication process and definitions varied by study, ±Eighty percent of false-positive cases were attributed to *C. parapsilosis*, a skin commensal

- Across 9 studies, a total of n=3,165 T2Candida Panels were prospectively collected and tested.
- A total of n=1,656 were tested in the USA and n=1,509 were tested outside of the US.
- The T2Candida Panel identified 3.5 times more on-panel organisms than conventional blood cultures.
- For prospective interventional clinical studies (n=4) describing complete or partial clinical adjudication of T2C+/BC- cases, 21/26 (81%) were deemed true, probable or possible infections.<sup>(3,5,6,10)</sup>

## Conclusion

- The highly sensitive T2Candida Panel identified 3.5 more on-panel organisms, directly from whole blood within 4.8 hours, compared to conventional blood cultures at 92.3 h across 9 clinical studies.
- T2Candida Panel has the potential to improve care by allowing clinicians to optimize antifungal therapy through added identification of BSI-causing pathogens that otherwise were missed by conventional blood culture.
- Future studies are needed to evaluate the impact of these added detections compared to conventional blood cultures.

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